WEEDS TREES and TURF

JULY 1973

TREE CARE ISSUE

ROPE FAILURE
A WTT INTERVIEW

OAK WILT WORRIES

COOPERATION IN GYPSY MOTH CONTROL

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WEEDS TREES and TURF

Volume 12, No. 7 July, 1973

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"Serving The Green Industry"

Rope Failure — Causes And Cures 12
Rope in the tree care industry literally ties the industry together. Every arborist and tree man uses rope in his daily work. Yet rope failures are common. Read why they are and what to do about them in this exclusive interview with Karel H. Liebenauer, sales manager, Lanphear Supply, Div. of Forest City Tree Production Co., Cleveland.

Small Plant Site Weed Control 14
Here's a market just waiting for the custom applicator. Weed control around small plants is becoming increasingly important from many angles. Vogel-Ritt of Michigan has found a way to cash in on the benefits of this exciting custom business.

Stone Pickin' Pro 16
Stone specialist William Bergman, Jr. can pick stones from a golf course under construction in nothing flat. He's been doing it for the past 25 years.

Security In Your Business 18
How's your security IQ? If you have found equipment missing or major thefts taking place in your area, it's time to examine your security progam.

The Silent Tree Destroyer 20
Robert L. Anderson, forester and forest pathologist, Missouri department of conservation, examines one cause of tree destruction. His analysis of this threat could cause many arborists to take a second look at disease control.

Worms Words And Willingness 22
Orleans, Massachusetts was knee-deep in gypsy moth and prevailing restrictions prohibited an effective control measure from use. Emile A. Ollivier and others successfully launched a campaign to rid the area of this pest. Other community arborists may be interested in using this technique.

Past Due Accounts 56
Getting your money for a job that's completed can be one of the biggest headaches in the business. Carl I. Morris, Sr. of Associated Claims, Silver Spring, Md. tells how sod producers and others can solve this problem.

The DIRTI 5 58
The sod producer often has the problem of investing large amounts of money in a sod crop with the payoff coming in several years. Dr. John R. Hall, assistant professor of agronomy, University of Maryland, shows how fixed costs can be viewed to gain a better understanding about sod investment costs.

A Creeping Bentgrass With A Swedish Accent 60
It was developed in Sweden. It's now being sold in the U.S. Emerald bentgrass has many desirable characteristics which golf course superintendents crave. Dr. Jerry Pepin, International Seeds, Inc., Halsey, Ore. reports on this new variety for use in sod and commercial turfgrass culture.

Editorial 6
Government News/Business 8
Green Industry Newsmakers 40
Industry People On The Move 48
Meeting Dates 50
New Products 52-53
Insect Report 54
Sod Industry Section 55
Advertiser's Index 73
Classifieds 73
Trimmings 74

The Cover

As malls and shopping centers have risen, the demand for landscaping with large trees has grown. Tree moving is becoming big business with specifications and bids submitted as part of an overall contract. Our cover shows the moving of large trees into this intercity mall. Large tree moving can add years of landscape beauty instantly to a desired location.

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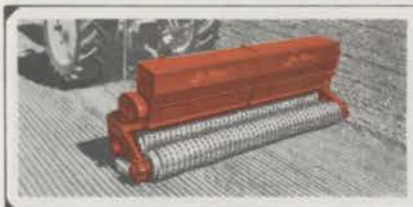

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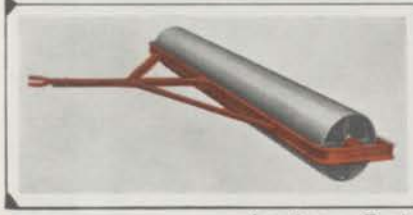

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Editorial Safety, A Six Letter Word

It is not surprising that organizations of the shade tree care industry have taken defensive steps to more clearly define safety requirements and specific job functions within the industry. It has been our observation that employees of the professional arborist are just as accident prone as the non-professionals and "storm scavengers" who shun industry association participation, state safety courses and other accident-prevention programs.

Within the past three months we have kept an informal tally of safety violations committed by tree climbers employed by selected professional arborists. Just for openers, our list includes climbers who were: struck by a tree branch; cut on the hand with a power saw; shocked by a short-circuited wire; climbing into trees with frayed ropes; wearing the wrong size saddle; struck by objects kicked back by a chipper; not tied into the tree properly; wearing street clothing and shoes in a tree; operating a bucket with outriggers not in place; and others.

In one case a climber grossly miscalculated a lateral move and severely hit his side against a large branch knocking off his eyeglasses and hard-hat. Only his safety line (which was not passed around a main leader) saved him.

The recently released American National Standard Z133.L, developed by industry leaders including the National Arborist Association and the International Shade Tree Conference, is an excellent standard for the arborist. Additionally the OSHA manual for arborists compiled for members of the National Arborist Association brings safety snafus into focus. Likewise, state safety programs like the 43rd All-Ohio Safety Congress specifically detail problem situations.

Why then is there an incongruity between these excellent safety measures and the poor on-the-job track record of professional arborists? It is because the employer (arborist) tries to motivate the employee (tree climber) by preaching safety. This method is about as practical as an elastic safety line. The employee soon believes that safety measures are company practices rather than individual practices for himself.

Safety posters can be wall-to wall, plastered on every piece of equipment and riveted on to hard-hats, but without individual motivation the tree climber will be safety color blind.

The professional arborist must communicate safety in a climate in which the employee cares first about his own safety, which, in turn, is the company's safety.

Likewise, the associations to which the arborist belongs must be continually motivate members not in safety practices but in job performance of

(continued on page 72)

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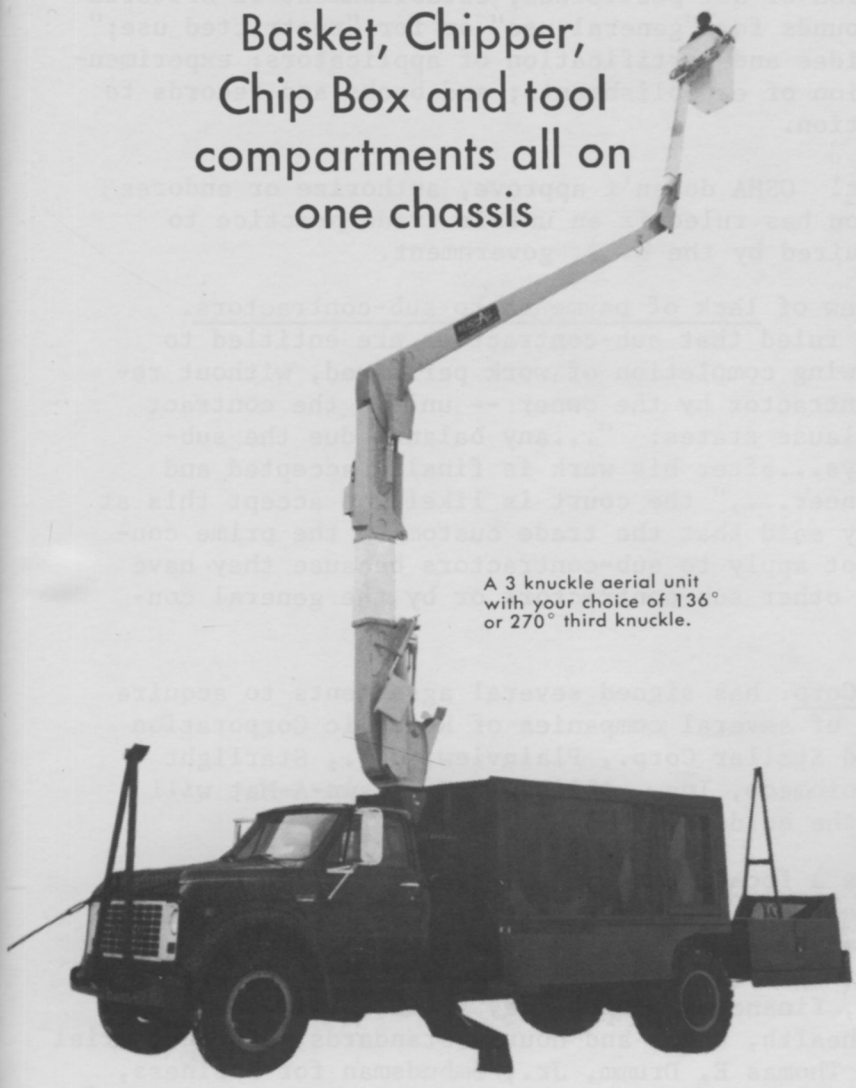

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Government News / Business

Six sub-groups have been established by the Environmental Protection Agency to enforce the Federal Environmental Pesticide Control Act. Broad group functions include: registration and re-registration of all pesticides; establishment of criteria to be used for classification of compounds for "general use" or for "restricted use;" employment of "restricted use" pesticides and certification of applicators; experimental use permit regulations; registration of establishments; and books and records to be maintained by producers for inspection.

OSHA APPROVED....Don't believe it! OSHA doesn't approve, authorize or endorse products. The Federal Trade Commission has ruled it an unfair trade practice to misrepresent products approved or required by the U. S. government.

Court judges are taking a dim view of lack of payments to sub-contractors. New York and California justices have ruled that sub-contractors are entitled to payment by the prime contractor following completion of work performed, without regard to final payment to the prime contractor by the owner -- unless the contract otherwise states. If your contract clause states: "...any balance due the sub-contractor shall be paid within 30 days...after his work is finally accepted and approved by the architect and/or engineer...," the court is likely to accept this at face value. A New York court recently said that the trade custom of the prime contractor paying when he is paid does not apply to sub-contractors because they have no control over the work performed by other sub-contractors or by the general contractor.

Lawn-A-Mat Chemical & Equipment Corp. has signed several agreements to acquire the physical manufacturing facilities of several companies of Republic Corporation of Los Angeles. Included are: United Stellar Corp., Plainview, N.Y., Starlight Tool & Mfg. Corp., Joplin, Mo., and Coinmeco, Inc., Illion, N.Y. Lawn-A-Mat will exchange 650,000 shares of stock for the holdings.

Federal Ombudsman for Business is a focal point in the Federal government where businessmen can come directly with questions, complaints or problems which may be solved by informal arbitration. To date this service has handled more than 8,200 requests from businessmen and others in the 24 months of its operation. These entail such topics as government procurement, financial assistance, truth in lending and advertising, occupational safety and health, wages and hours, standards, and industrial pollution. If you need help, write: Thomas E. Drumm, Jr., Ombudsman for Business, U. S. Department of Commerce, Office of the Secretary, Washington, D. C. 20230, or call (202) 967-3178.

American Garden Products, Inc. has announced the signing of a definitive agreement to acquire Cal-Turf, Inc. Finalized terms of the acquisition involved a consideration of about $1.33 million in cash, 12,000 shares of American common stock and contingent payments based on future profits of Cal-Turf.

The freeze on prices of all merchandise and services has created new concerns and new responsibilities for retailers. Most guidelines have been spelled out by the press. What about pricing new merchandise never before offered for sale. The Cost of Living Council says to apply the customary initial percentage markup on the most nearly identical merchandise sold in the freeze base period to the invoice cost plus freight of the new merchandise.

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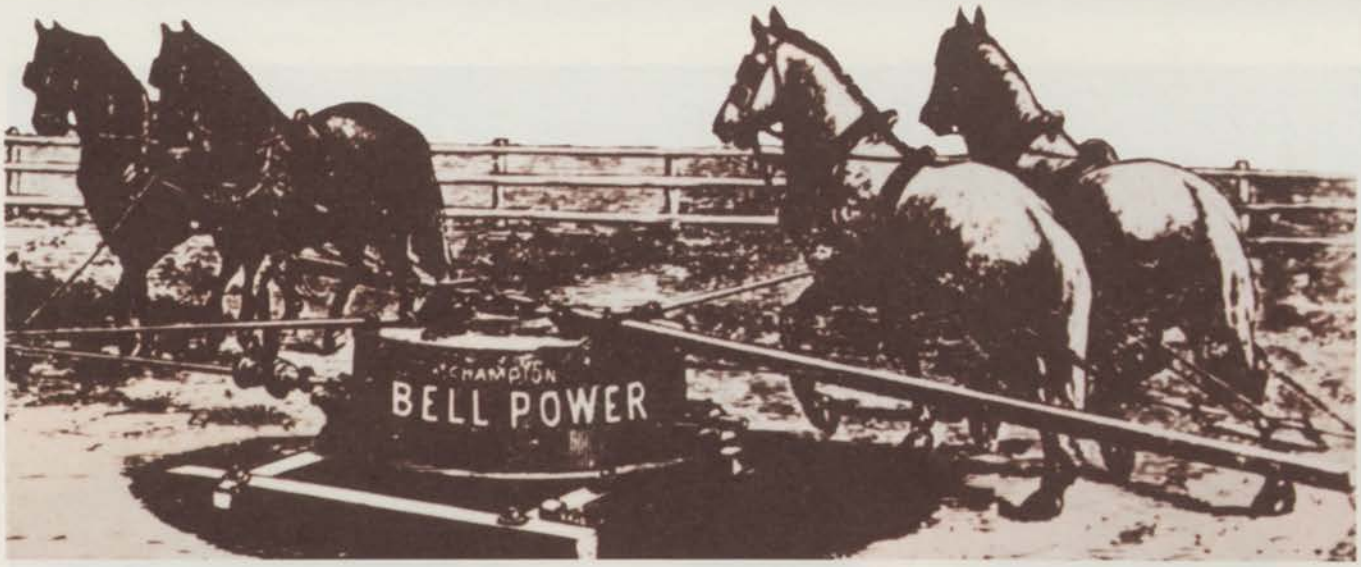

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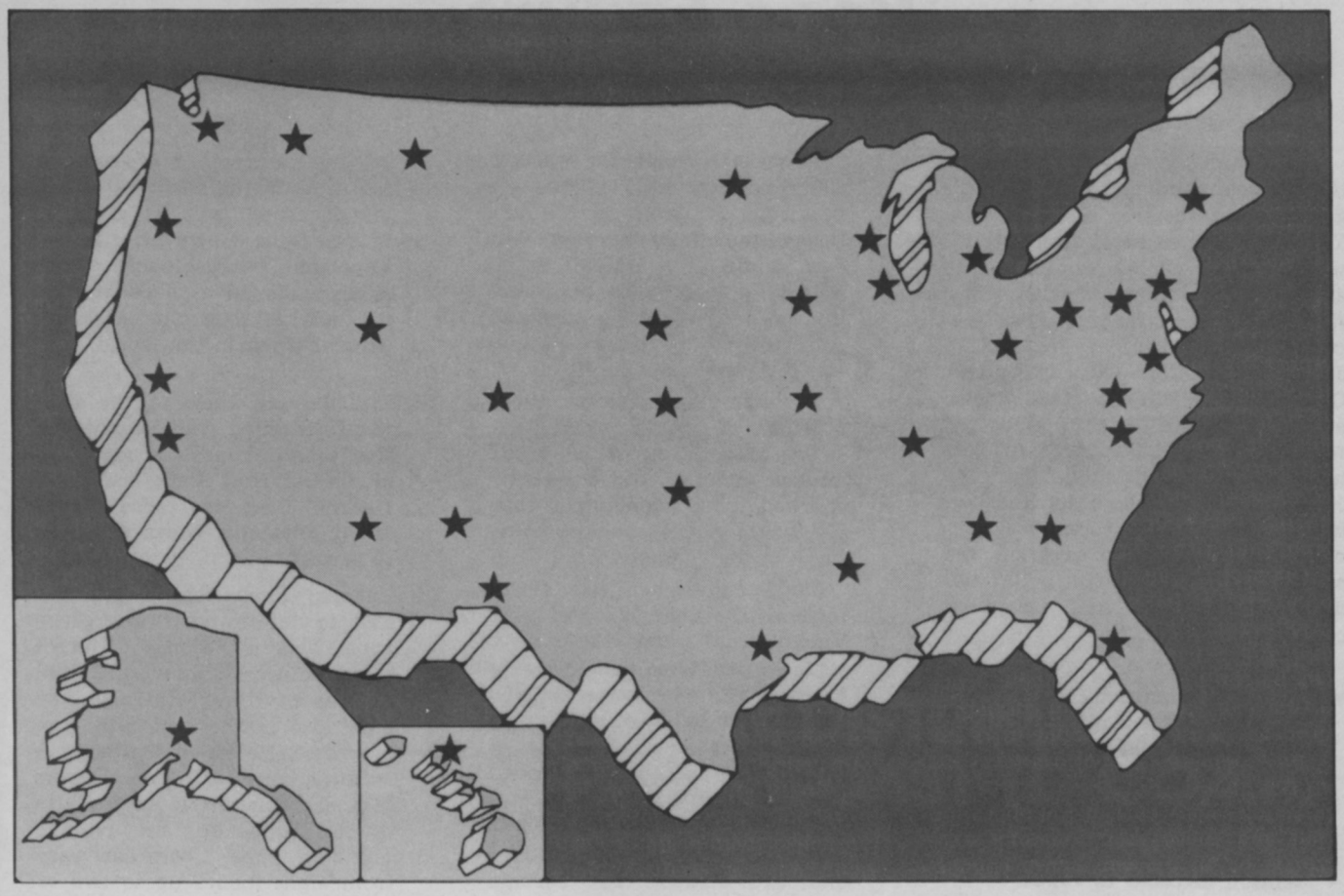

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Rope Failure
Causes and Cures

Editor's Note: Rope failure in the tree care industry is one of the greatest hazards tree climbers face. Yet, with proper care, accidents involving ropes can be minimized. In an exclusive interview with Karel H. Liebenauer, sales manager, Lanphear Supply, Div. of Forest City Tree Proteciton Co., Cleveland, Ohio, WEEDS TREES AND TURF asked about different kinds of ropes and the advantages of certain newer materials used in rope construction over the older and better known manila rope. We present this interview in question and answer form to help you better understand the care and treatment of ropes.

WTT: Rope condition has always been an important item with the professional arborist. As a safety standard, the American National Standard Z133.1 specifies certain precise details about ropes. Why is there so much attention directed to ropes?

Liebenauer: Two recent rope accidents by tree climbers bring into sharp focus the answer. In one instance manila rope at least three years old broke at a knot causing the climber to fall from the tree. In the second case, a rope was stored near a storage battery. Acid fumes disintegrated the rope fibers. Accidents such as these can be prevented. Proper care and handling of rope is vitally important.

WTT: What is manila rope and why is it used by the arborist?

Liebenauer: Manila rope is basically composed of selected manila fibers which are twisted together to form rope. The clinging together of these fibers in close proximity gives the rope its strength. But remember that manila rope is organic, that is, coming from a plant. It is not able to withstand a lot of flexing. If you tie a knot in the rope and leave it there for a long period of time, the fibers are bent sharply and eventually the knot will break.

Arborists use manila rope because until recently it was the best rope available for the job. It gave the climber greater freedom while in a tree. It could withstand loads such as lowering tree limbs and tree climbers. And with proper care it could last for a period of time.

In years past, a tree climber's rope was a very personal item. It was essential to his work. He kept it with him and frequently checked it for even minor cuts. He would never consider leaving it to the elements.

Modern equipment has falsely lessened the importance of rope. Bucket trucks and cranes have replaced life lines and lowering ropes. Chain saws have enabled the climber to make many cuts that have reduced the size of limbs that heretofore needed careful rigging and powerful ropes to lower the whole limb.

Today we've found the tree climber's attitude has become more casual about the condition of ropes. Instead of hanging the rope up and hanking it, some tree climbers will throw a coiled rope onto a truck bed; they'll throw tools on it, sometimes sharp tools; they'll throw gasoline cans on it (The gas could spill out and enter the rope fibers); tar can get on it; and the rope can get wet. Moisture in the case of manila fibers is fatal.

WTT: So while rope is still an important item with the tree climber, its relative importance in relation to other items in use has diminished. Is this correct?

Liebenauer: The advent of the bucket truck and the crane made the job of the arborist somewhat easier. It required less skill to operate this type equipment than to rig a series of ropes in limb removal.

There is a tremendous turnover of help in the tree care business. Arborists have been forced to use other equipment and do less training in order to get the job done. Consequently, the importance of rope as far as the demand of substance is concerned isn't as great as it used to be. However, it is still important, because once a climber depends on a piece of rope for his life it is the most important thing in the world.

WTT: Let's get back to the rope itself. Earlier you mentioned that manila rope was composed of fibers. How long are these fibers? And as these fibers wear, does this cause the rope to break?

Liebenauer: Fiber length is difficult to determine in any given rope. This is because different manufacturers use different lengths of fibers and also, the final size of the rope will govern the size of the fibers. A manufacturer will select fibers that are compatible to the size of the rope. For an average climbing rope fibers can vary from eight inches up to two or three feet in length. By checking ropes regularly, you want to see when those fibers start to break down into shorter lengths. As the rope wears, the fibers break. When enough fibers break in a given area, the strength of the rope is reduced.

WTT: How do you test the condition of a rope? In other words, how can you tell if a rope is safe?

Liebenauer: The condition of manila rope is pretty hard to determine. A man would have to examine a manila rope inch by inch by inch and untwist it and examine the fibers. Regular visual inspection of the rope as a whole is important, however. A man who regularly uses his rope will recall how it was used and prevailing environmental conditions when it was used. He will know how it has been stored and how old it is. A man who regularly uses his rope will keep all these things in mind when examining the rope.

The second way to test a rope

(continued on page 34)

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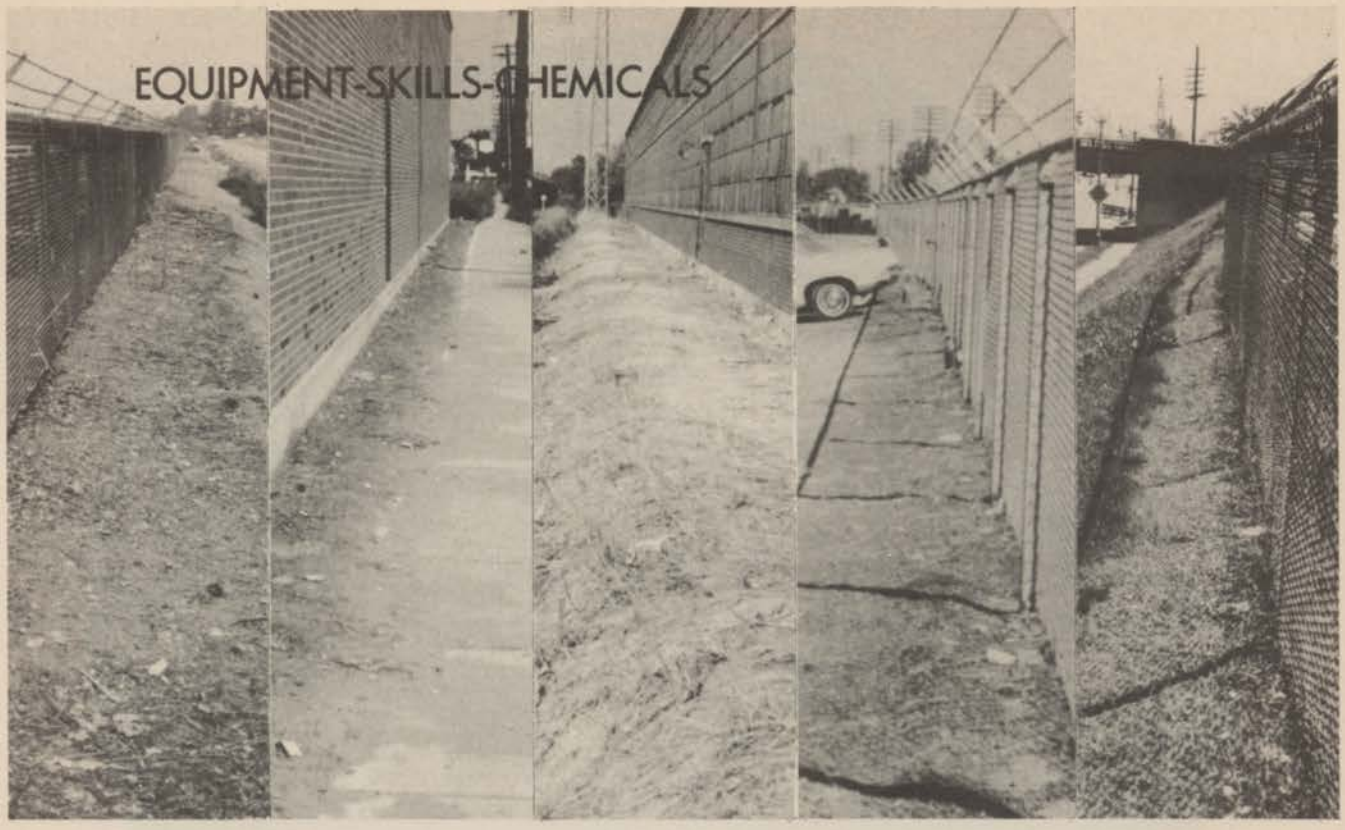

Simplified maintenance is the pattern along a fence line (left, above) when chemical weed control is used. The weed-free zone next to the building (above) helps in keeping rodents out of this food warehouse. Vegetation under control (center) has been done with a custom application of Hyvar X-L bromacil. The treated parking lot (above) will stay free of weeds year-round. Note the ease of mowing when weeds along a fence line (above right) are kept away.

Small Plant Site Weed Control

Blue Ribbon Market For The Custom Applicator

SIGNIFICANT maintenance improvement dividends are within reach of small and medium-sized industrial plants that are plagued with weed control problems.

That's the report out of Detroit, where an experienced pest control farm has recently been broadening its service to include weed and brush control on plant sites and has been taking care of a persistent maintenance headache for many metropolitan plant people.

The weed story is told in the experience of Vogel-Ritt of Michigan, a branch of the Philadelphia-based Ritt Consolidated Industries Pest Control firm, and in the work that Vogel-Ritt is doing for scores of plants, warehouses, commercial firms, lumber yards, parking-lot operators and others not only in Detroit, but also in Flint, Bay City, Saginaw, and Lansing.

For the past several years Vogel-Ritt has been building its capacity to provide custom-applicator weed control service for a segment of industry that is beset with a growing vegetation problem but has hardly known how to attack it.

On the one hand, small to medium-sized plants usually have limited unoccupied land on their sites; but they also are faced with constant maintenance budget pressures and are rarely in a position to keep landscape specialists on the payroll.

So when spring and summer come, the weeds take off—and a small but vigorous and untidy jungle quickly springs up along a fence line, next to a building, in the parking lot or on the rail siding.

To deal with problems like these, Joe Watkins, manager of Vogel-Ritt, says: "A plant maintenance man can have the weeds cut, chopped, or pulled; but he usually finds it's a job that takes a lot of costly hand-work and must be done a number of times during the growing season. Labor is usually not available for the job.

"We have a new idea now for the small and medium-sized plant—it's a custom chemical weed control program, with all the worry and bother turned over to our specialists who can provide season-long control of unwanted vegetation through attention and treatment that improves the environment."

Benefits of chemical control have been familiar to maintenance men on larger plants which have long carried on vegetation management programs often with their own manpower and equipment. But now in smaller Michigan plants others are learning some of the advantages of a good program that may cost a few hundred dollars—or sometimes as much as $1100-1200 for larger sites

(continued on page 24)

save trees

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A TALE OF TWO TREES: Six months ago the tree on the left was injected with INJECT-A-MIN (minerals & vitamins). As is revealed by the picture, the tree has returned to perfect health. Before this injection, the tree on the left was more retarded than the one on the right.

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For More Details Circle (157) on Reply Card

Trucks quickly carry many tons of stones away. Stones are used as the base for greens and future parking areas. The entire operation is highly mechanized.

Bergman claims he can keep 200 pounds of stones in the air with this stone picker. The vertical elevator lifts stones and pitches them into the waiting truck.

Stones are windrowed for easy pickup. When finished the course is ready to seed. Bergman picks up stones as small as three-fourths inch. Picker works on most any terrain.

Here's a stone's eye view. Windrowed stones are picked up easily with this converted potato digger-stone picker. Bergman designed and built the picker himself.

Stone Pickin' Pro

PEBBLES, rocks and stones are the unusual trademark of William Bergman, Jr. His business is stone picking, an enterprise that would be a strong candidate for "What's My Line."

He has capitalized on the fact that a stone is like a plant out of place. A problem. And when that problem occurs in multiple quantities and on a golf course under construction, "Stoney" Bergman can bring results that puts smiles on a conrtactor's face. He's built quite a reputation in his 25 years of experience.

This Reese, Michigan based firm operates anywhere. Operating a fleet of trucks and buses "caravan style," he has picked stones from Florida to Michigan and from Texas to Boston. Like the rollinf stones he gathers, Bergman's mobile operation can descend on a job and be ready to go in short order.

The heart of the operation is his stone picker. Call it homemade and handy, but Bergman claims it will out pick and out live most any other unit on the market.

"The secret is in the construction," he says. "We've essentially taken a potato digger and converted it into a stone picker. Stones like potatoes come in all sizes. So we designed our picker to handle pebbles as small as three-fourths inch and as large as ten inches."

Once lifted by the picker, stones are conveyed by a series of belts and chains to an attached elevator which deposits them into a truck. From the ground to the truck, stones are wisked through the picker at high speed. Little or no dirt remains on the stones.

Bergman will tell you quickly that his picker can pick up every stone on a course but the last one. Then he waits while that statement sinks in. Slyly he says, "This is because it takes a stone to push the stone being picked up. We don't dig up stones with this picker. They must be laying on the ground. The picker rolls a stone forward until contact is made with a second stone. It pushes the first stone onto the revolving platform and then on to the waiting truck."

In a typical operation he will traverse the course several times with tractors pulling drags and rakes. This brings semi-buried stones to the surface. These are

(continued on page 72)

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SEVIN Carbaryl has a record of effective control of target pests. An objective look at benefits vs. risks favors the use of SEVIN due to its biodegradability and low hazard to people, birds, fish and wildlife.

As with all insecticides, be sure to read the product label and follow directions for use carefully.

Make sure you're using new Liquid SEVIMOL this year!

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Security In Your Business

NEXT TIME you can't find that chain saw, electric drill or hank of new rope that you left sitting in the workshop, better alert the local authorities. You could be the victim of a burglary.

Arborists, industrial weed control firms, and professional turfgrass managers across the country are reporting bizarre acts of burglaries that connote professionalism in crime far above the level of local pranksters. And it's on the increase.

City foresters in Illinois recently discovered prized black walnut trees removed. A local arborist in Ohio had three chain saws stolen from a parked truck. A weed control firm in the southeast reported 50 cases of herbicides taken from the back-end warehouse—in broad daylight. A golf superintendent in the midwest went to his equipment shed early one morning and discovered several power mowers, a tractor and a backhoe missing. He had personally put the equipment away the previous night. The list goes on and on.

Professional thieves have found small business firms one of the most lucrative sources in their "trade." Unlike private homes where they run the risk of neighbors or residents, small businesses seldom have night watchmen, protective equipment or adequate security. Furthermore, the nature of the business often takes the owner and other personnel away from the shop for several hours in a day. In and out traffic of clients can cause congestion and there aren't enough eyes to watch every part of the operation all the time.

Thus, when a truck enters the property with two people in it the owner can have cause for anxiety if one person heads for the main office and the other for the shop area. Whether in the act of innocence or otherwise, it happens every day.

Generally, professional thieves who raid firms of the "Green Industry" are not after high priced equipment such as bucket trucks, chippers, cranes, mounted sprayers and big mowers. Rather, they find it much easier to "lift" smaller items more commonly found elsewhere or chemicals which can be blackmarketed into the agricultural community.

Chain saws are a hot item. Mobile radios, small power mowers, trailing spray rigs, ropes—almost anything that someone else in another industry or another part of the country can use are potential items. Even larger items, if commonly around like trucks, can be successfully stolen and re-sold. The rule of thumb is that if you need it, someone else probably needs it too.

The professional burglar is as highly skilled in his endeavor as you are in your business. He knows his "market" and just what can be "fenced" quickly to return a fast buck. He also knows exactly the time to strike. Don't necessarily count on being hit only at night. The professionals can pull a heist at mid-morning just as easily as they can at midnight.

They work singly or in pairs; sometimes in gangs. They operate from stolen vehicles, rented cars, or on foot. They know that small items will not be as likely to be missed. Also, many firms have deductible insurance against theft. An owner with $200 deductible is not likely to report the disappearance of a $150 chain saw. Or a $225 mower.

What can you do to protect yourself against these crimes? First, take a good look at your physical arrangement—draw it out on paper —and decide where the most vulnerable areas are. Consider that along with a security system you must also include items such as fire protection, power losses, etc. Second, map out a plan of action that will facilitate easy entrance to company property by workers but provide a barrier to customers. Redesign the job truck beds so that equipment is not visibly exposed. (It may also be to your advantage to do this from a safety angle.) Make sure that responsible people are around the premises during business hours—including lunch and coffee breaks.

Here are some other tips:

Keep a watchdog. One chain saw dealer in Cleveland keeps a large dog tied up in his parts department. One look and two barks from him and anyone immediately knows that he means business. A dog tied up in the work yard between shop and office can patrol both areas successfully. If you're located in a more rural area, consider keeping geese. While they do not command quite as much respect as a dog, their hearing is more acute. And the noise created by a flock of startled geese will surely get your attention.

Adequate lighting. This is a must if you park equipment outside or have several buildings. Other than the fact that OSHA requires certain lighting for safety, light (particularly bright light) has a deterrent effect. A well lighted area reduces the opportunity for midnight requisitions. For some, stealing is a game with odds on not getting caught. You can reduce the odds by outside and inside lighting.

Install fences. Security fences won't stop the professional, but they may slow him down. The object is to make your firm a less desirable place for a burglary to take place. Additionally when you have fences, you can also have gates and doors. Keep them locked when you or your employees are not there. That goes for daytime as well as dark. When the work crew is not physically in the work area, lock the gate. If you are a superintendent who must travel the course to check on work progress, lock the work area prior to leaving. If necessary, provide keys to trusted employees or job foremen. Be careful with keys, however; they have a habit of getting lost—or in possession of the wrong individual.

Invest in good locks. A cheap $1.98 lock will give you about the same in protection. But a $5 to $10 bolt lock is a good investment. Easily "fenced" items such as saws, tools, radios, etc. should be kept behind an additional enclosed storage area. Good locks on truck compartments make it more difficult to "lift" these items. It's not a bad idea to periodically change locks all the way around the area.

Light beams that trip when crossed can be another device. They silently inform the owner when potential danger exists. Pressure sen-

(continued on page 30)

For More Details on Preceding Page Circle (158) on Reply Card

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For More Details Circle (128) on Reply Card

An infection center of oak wilt as seen from a fire tower. Note how the trees are dying on the edge as oak wilt continued to spread in a circle. More than 19 states have been affected by this disease.

The Silent Tree Destroyer

By ROBERT L. ANDERSON
Forester and Forest Pathologist
Missouri Department of Conservation

EACH year approximately 20 billion board feet of sawtimber are lost to disease.[16,18] This does not include losses to non sawtimber species and trees of smaller sizes.

Each year 45 percent of the total sawtimber loss is to disease with 20 percent to insects, 17 percent to fire and 18 percent to all other agencies. Once we add the hundreds of thousands of shade trees lost yearly to disease one can conclude that we are facing a mighty foe.

This is even more dramatic as the nation's population increases and our forest land is converted rapidly into urban developments, shopping centers, super highways and a variety of other uses. More and more we hear the cry from the ecologist that proper management of our timber and shade tree resources is a must.

As foresters and arborists we must take a closer look at what positive action is available before it is too late. The 20 billion board feet lost to disease each year represents a sizable timber loss. Indeed, it can best be described as the silent tree destroyer.

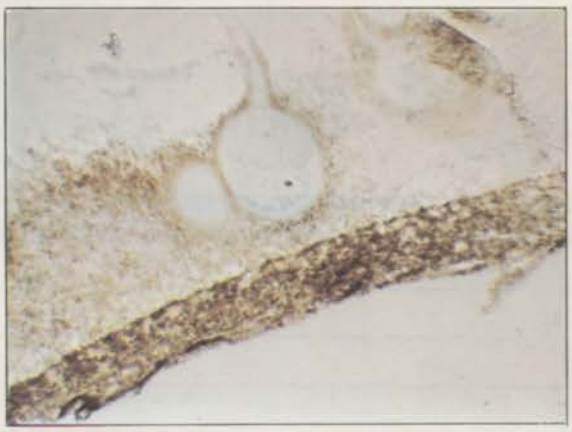
What we can do to reduce this 20 billion board feet of lost timber resource and the thousands of shade trees is a question that is examined very closely by many agencies. The solutions are as varied as the hundreds of diseases that affect our trees annually.

In order to objectively evaluate the problem we must examine the disease/plant relationship in detail.

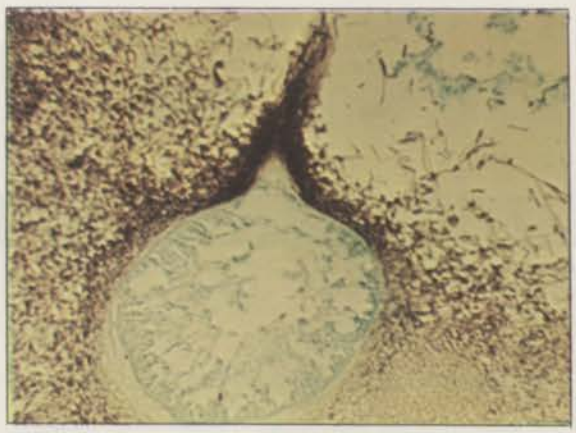
First, we find that the majority of the forest and ornamental diseases associated with the nation's plants require a wound that has opened the tree to the infection. There are a number of ways in which a plant can be wounded. Perhaps fire is our greatest culprit, with man (mechanical damage) and environmental conditions (ice and etc.) causing their fair share.

Once the disease organism has entered the tree, decay and/or death is inevitable. Good management practices have been found to be most effective in reducing disease and in increasing the economic return from a forested site or increasing the value of a property upon which the tree is located.

(continued on page 43)



This is a longitudinal section of the oak wilt fungus. Magnified 100 times by an electro-micrograph, the section shows the sexual structure (Perithecia).



Here's a closeup of the photo at the left. It is magnified 200 times. Note the spores or inoculum inside the circular structure.

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Here's why. Jacobsen gives the Commercial 60 real customer pleasing features. Like a husky 18 H.P. engine that lets it zip through any rough stuff and still cut a wide 60" swath.

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For More Details Circle (133) on Reply Card

WORMS WORDS AND WILLINGNESS

a co-op venture in gypsy moth control

"Two-inch caterpillars blanketed the walls of houses ... housewives couldn't open their doors ... one road actually became hazardous to motorists because it was covered with the slippery bodies of caterpillars!"

Rather than a scene from a science fiction thriller, this is how Emile A. Ollivier described what it was like to live in one picturesque Cape Cod community when the gypsy moth came to town. Ollivier is insect pest superintendent and tree warden for the Town of Orleans, Massachusetts.

The greedy gypsy moth, of course, was no stranger to Ollivier's community, or to practically any other wooded area of the northeast. For several years this voracious pest has chomped it way through millions of acres of shade trees, defoliating often to the point of killing them, disrupting recreational activities and generally making a supreme nuisance of itself.

What made the problem unique in 1971, however, was that Ollivier was virtually powerless to do anything about controlling the pest. Spraying with DDT, of course, was out. So, it seemed, was spraying with any other effective chemical. At the urging of the Audubon Society and the Association for the Preservation of Cape Cod, a 90-day ban had been imposed by the state on aerial application of Sevin carbaryl insecticide. Since caterpillars do all their destruction between early May, when they hatch from egg masses on trees, and the end of June when they enter the pupal stage prior to becoming moths, the 90-day ban eliminated any chance of control for the year.

What's more, the gypsy moth situation appeared to be getting worse, not better. Despite claims that gypsy moths, given free reign, would depopulate themselves, or that natural controls would soon regulate the pest without further effort from man, the facts and figures showed that Cape Cod could expect an even more massive onslaught of gypsy moths in 1972.

Ollivier's pest population growth records, for example, showed 220 acres of woodlands infested in 1970, 1,200 acres infested in 1971, and an estimated 5,000 acres to be infested in 1972.

Gypsy moth egg counts told a similar story. "We found several acres with an egg count of 31,000 egg masses per acre," Ollivier said. "On one particular tree a count of 1,923 egg masses was recorded. Each egg mass has from 300 to 450 eggs. This means that this one tree could produce nearly 1 million cateripllars."

So with a ban on effective gypsy moth insecticides, and with Federal, state and county governments taking a "hands off" policy on the emotionally and politically-charged spraying issue, Ollivier had a lot going against him in his efforts to control the pest in 1972. What he had going for him, however, was Mrs. Jean Olmsted, a selectwoman for the nearby town of Brewster, a conservationist, and a lady who had witnessed the '71 infestation and vowed not to let it happen again. Mrs. Olmsted marshalled the resources of Barnstable county, which covers Cape Cod.

Organizing through a series of local meetings, these citizens decided

Emile A. Ollivier (above left) insect pest superintendent and tree warden for Orleans, Mass. checks out a spraying course with Dick Canning of Chemapco, Inc. Most residents participated in the co-op program.

that indeed, something had to be done about the gypsy moth. And since it was apparent that help or financing from Federal, state or county sources would not be forthcoming, it was also decided that they would have to do it themselves.

The first step was to hold a public hearing at which the 90 day ban on spraying was overturned. This left just one obstacle in the pathway to an effective spray program—money. Only $16,000 had been budgeted for the year for pest control programs in all of Barnstable county. This would have covered only 2,000 acres. It was estimated that at 20,000 acres were infested.

Since no single community could afford to do the job, it was decided that the answer to financing lay in banding together in a cooperative spraying venture. Spearheaded by Mrs. Olmstead and two other selectmen from the towns of Harwich and Yarmouth, the cooperative program resulted in the spraying of 22,000 acres of Cape Cod residental and recreational areas encompassing six municipalities.

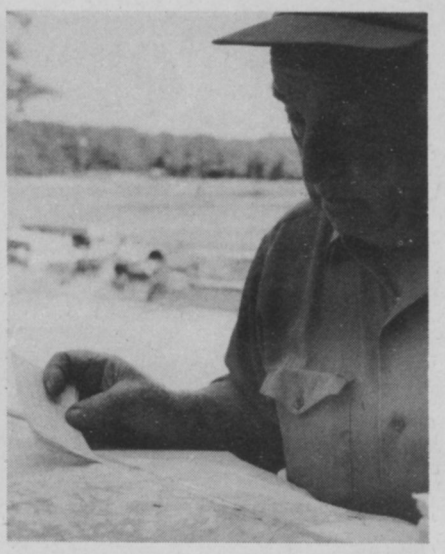
The communities could afford the program because a central source coordinated the program and prices were based on 20,000 acres instead of small allotments. Most important, the program was effective.

"The visible results were really dramatic," said Dick Canning of Chemapco Inc., the firm contracted to handle the program. "Our people on the ground reported that caterpillars were dropping from trees within fifteen minutes after we made a pass in the air. One man and his two boys were sweeping them up with leaf rakes. As defoliation took place, the cut-off line where we had to stop spraying was clearly visible from the air," Canning reported.

Residents were given the option to have their property skipped during the spraying by identifying the edges of their land with red balloons provided by the pest superintendents. Few took the offer. Larger boundaries were staked off for the aerial applicators with yellow balloons.

Proper application of the proper material was of key importance in the Cape Cod project. Economy and protection of the environment were obviously major criteria. So was speed. In order to get effective gypsy moth control, Canning had four weeks to cover 22,000 acres. This made aerial application a must.

"But even with aerial spraying,"

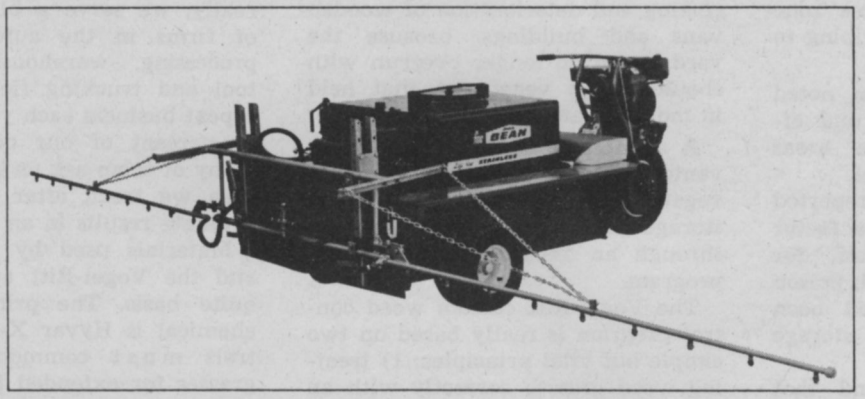


Postcards were used by residents who wished to have their property sprayed. Ollivier checks these requests against his county map.

Canning said, "we would need a fleet of helicopters to do the job with conventional water formulation insecticides." A lower volume material was required, and the one picked was Sevin-4 Oil, a compound with a sticker base that keeps the spray on the foliage.

According to Canning, the material

(continued on page 42)



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FMC Agricultural Machinery

For More Details Circle (143) on Reply Card

Weed control planning is the conference topic in a sesion between Travis Braun (1) and Joe Watkins of Vogel-Ritt. They direct the firm's service that keeps weed growth down. Small plant sites have a great need for this service.

SMALL PLANT SITE WEED CONTROL *(from page 14)*

—but will provide season-long control of weeds.

A Detroit food processor reports saving hours and days of labor in cutting and trimming, when the firm went to a chemical program to maintain a buffer, weed-free zone around its plant, thereby helping to reduce rodent problems.

An automotive parts firm noted improved employee safety and efficiency in outside storage areas with chemical weed control.

A tool and die company reported that employee health was a factor in their continuing interest, for without proper weed control, poison ivy and thorny bushes had been overrunning parking and storage areas.

A lumber company found that with an economical, effective weed control program, insurance rates came down because fire hazards from dead weeds were eliminated.

Trucking company managers agreed that chemical weed control in parking areas reduced equipment rusting and deterioration of wooden vans and buildings, because the yards were no longer overrun with shoulder-high vegetation that held in moisture and humidity.

A small tool firm found that inventory losses were cut when dense vegetation adjacent to its plant and storage buildings was eliminated through an annual chemical weed program.

The Vogel-Ritt custom weed control program is really based on two simple but vital principles: 1) treating weed growth correctly with an effective residual material such as Hyvar X-L bromacil and then 2) checking back on the treatment in a couple of months to be sure the customer received the kind of control which had been guaranteed. Behind this program, however, there is a lot of careful planning and detail; and no one knows it better than Travis Braun, who heads up weed operations for the pest control firm in Detroit.

Braun is a trained agronomist, with degrees from Cornell and Michigan State. He worked five summers on farms in New York, added herbicide marketing experience with Du Pont, and for the past half dozen years has been building the small plant site weed program for Vogel-Ritt of Michigan. This firm did its first weed control work as much as 15 years ago; but it was not until Braun was on the scene in 1966 that Manager Joe Watkins felt justified in pushing more aggressively into the small plant site weed field.

It's clear what Braun's know-how and training have meant to Vogel-Ritt customers. Every year the number of these firms has been growing.

Braun says: "We are in the small and medium-sized plant site market, because that's where our equipment and our applicator skills fit best. But really, we serve a blue-ribbon list of firms in the automotive, food processing, warehousing, machine tool and trucking fields. We have repeat business each year with 85 to 90 percent of our customers, and many of them ask us to increase the area we treat, after they see and evaluate results in an initial year."

Materials used by Travis Braun and the Vogel-Ritt applicators are quite basic. The primary residual chemical is Hyvar X-L which controls most common weeds and grasses for extended periods. Other

(continued on page 26)

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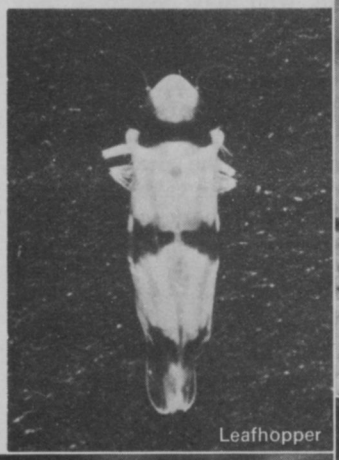
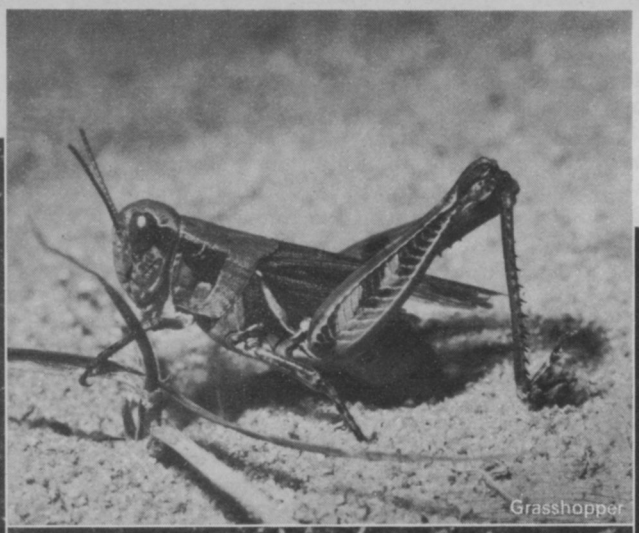
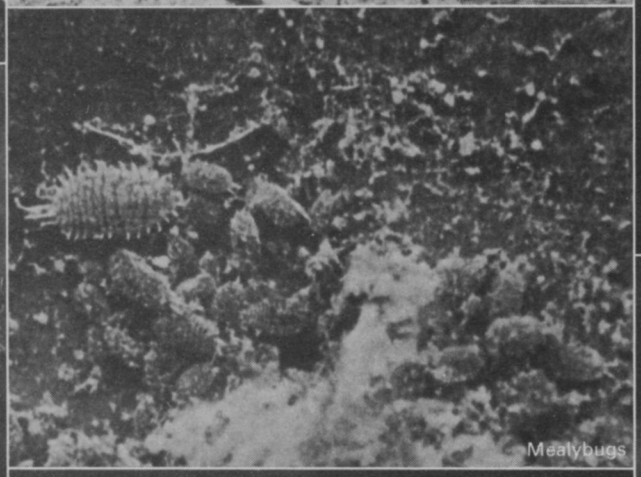

Leafhopper

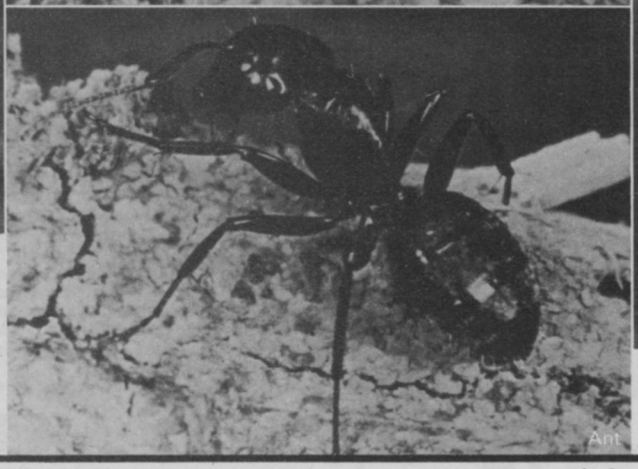

Grasshopper

Hairy chinch bug

Cutworm


Mealybugs

Bagworms


Ant

Ag-Organics Department, Midland, Michigan 48640

These are only seven of the turf and ornamental pests Dursban controls. If we had more space, we could show you another seven. Like sod webworms, brown dog ticks, earwigs and Hyperodes weevils in turf. Or ornamental plant pests like mites, spittlebugs, exposed thrips, white flies and many more. But our point is, DURSBAN* insecticide is the choice of professional lawn spraymen when they need to get the job done. DURSBAN insecticide is effective on a wide variety of insects—including resistant strains. And it's effective in a wide variety of applications. It's economical because a little goes a long way. It's non-phytotoxic, and it is biodegradable. So, if you haven't tried it yet, it's about time you did. Just remember to read the directions for use and follow the precautions for safe handling on the product label.

*Trademark of The Dow Chemical Company

DOW*

DOW CHEMICAL U.S.A.

For More Details Circle (105) on Reply Card

chemicals in the program include spot treatment of Trysben 200 (for woody plants like vines) along with Ammate X as a control in areas where desirable vegetation is close by and Surfactant WK to increase weed control efficiency when growth has started. Chemicals such as Amitrole T and Paraquat are also used to knock down standing weeds, while the residual materials work primarily on roots and germinating seeds and stop growth before it starts.

Vogel-Ritt applicators, of course, follow product labels carefully, using a 1.5-3 gallon rate of Hyvar X-L to control annual weeds and grasses such as foxtail, rye grass, wild oats, ragweed and turkey mullein. A 3-6 gallon rate is used on perennials such as bluegrass, quackgrass, dandelion, dog fennel, goldenrod, plantain and wild carrot; a 6-12 gallon rate is used on hard-to-control perennials such as nutsedge and horsetail.

In addition to knowing how much product should be used to handle a specific weed problem, the Vogel-Ritt applicator brings equipment knowledge and mixing and spraying knowledge to the job, so that in a few hours a plant maintenance man's weed problem is solved for the ensuing year.

One key step, however, is the weed control planning that precedes any treatment on a plant site. Braun, or one of his nine associates who call on plant maintenance managers, draws up a simple site plan to show the Vogel-Ritt customer exactly what areas will be treated and to tell the Vogel-Ritt applicator how to treat. The plan is a useful reference for a post-treatment check and for a review of the needs of this plant site a year later. It is also the basic estimating tool to help establish the price of Vogel-Ritt service on a job.

New ideas for better service are constantly being developed by a weed specialist like Braun. Following several years of trials by numerous investigators, Braun is now suggesting that there is really little reason to concentrate applications of residuals such as Hyvar X-L in the spring months. A fall treatment, he notes, will be effective for the following growth season, when it is properly applied. By extending the treatment season, Braun has been able to get better utility out of his equipment and thereby work to keep overall prices down, in the face of rising labor costs. Vogel-Ritt of Michigan has, in effect, opened up a fall treating season for the smaller plant man, who may recognize that winter cold weather will indeed control existing weeds but it will not prevent their regrowth in the spring. The right amount of the correct chemical, however, will do that job until the end of the next growing season. And that can take a load off the mind of maintenance men during a busy spring or summer vacation period.

Vogel-Ritt's 40 service men who are making regular pest control service calls throughout Michigan are in an ideal spot to help their customers deal with weeds as well as pests and insects. They simply ask for help from their own firm's weed control division; and Braun and his associates are ready — to make a call, draw up a plan, schedule a weed treatment, and follow-up with a post-treatment site check.

"This kind of service is something a smaller plant man really appreciates," observes Braun. "We have found it helps our customer solve a tough problem — and one that can lead to a municipal citation when a city ordinance is violated while it is overlooked or ignored." We have

(continued on page 28)

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What makes this one so different from other chippers?

An exclusive six-sided disposable bed knife with 50% more life expectancy than competitive four-edged blades.

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For More Details Circle (110) on Reply Card

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This is the STIHL SG-17 Mist-Blower that Everyone is Talking About!

It blows, dusts and sprays dry and liquid chemicals, etc. to kill weeds and insects; to fight plant and tree diseases and to perform many related jobs in the garden, on the farm and in nurseries.

It has also proven very versatile for spraying at construction jobs, blowing leaves and debris in sport stadiums, parks and recreation areas, in spraying cattle and dairy buildings and many new uses are being discovered every day.

You'll be amazed at its perfect balance and ease of handling and also at its very, very easy price. See for yourself. It's a STIHL!

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Hayward, California 94541
Code 415-785-9100

For More Details Circle (144) on Reply Card

Weed contrast outside Detroit plant is seen in treated area (foreground) and untreated overgrown area behind parked car. Hyvar X-L bromacil weed killer keeps weeds down for a full season.

concentrated on plant areas that involve anywhere from a half-acre to perhaps three acres of vegetation. We have helped eliminate mosquito-breeding areas and chemically trimmed weed and grass growth from fences, buildings, rail sidings and walls. We have helped auto dealers keep weeds out of parking lots; and the results a customer sees, as in a paper company recently, usually encourage him to extend the first year's treatment. But sometimes our customer may want to take a program beyond where we feel he ought to go.

"When a man wants to go too far too fast, we may tell him to hold up, even though the delay costs us short-term business. We want to be **sure**—not **sorry** — about our work. Last year, for example, we discouraged one firm from broadcasting residual materials over an area as large as a football field. We simply thought that his plan would not be desirable from an environmental view, for the area was surrounded with residences, and we did not want to establish a miniature dust bowl."

Training plays a big part in the success Vogel-Ritt has had in developing a small plant weed service program. Braun and Watkins have turned to a Du Pont industrial weed control specialist, Clinton B. Harris, for help in this area. Harris concentrated first on applicator know-how, and he has also established weed control principles in annual sessions with Vogel-Ritt's weed representatives.

"This type of training helps build individual competence and confidence," notes manager Watkins. "When we upgrade our thinking, we find chances for new service. And that's what our business has always been all about. We're getting our sales people out in the field to work with our applicators, so they will develop more knowledge to service the needs of small and medium-sizzed plant people. □

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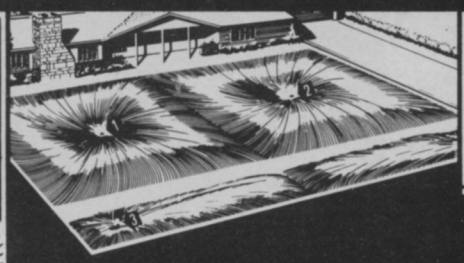

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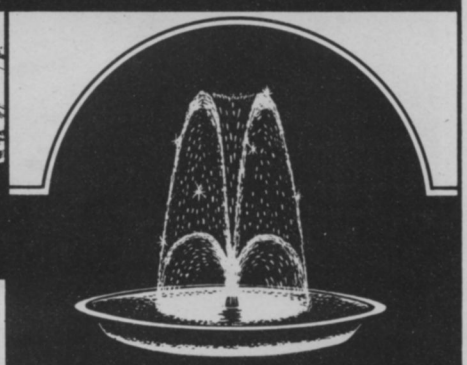

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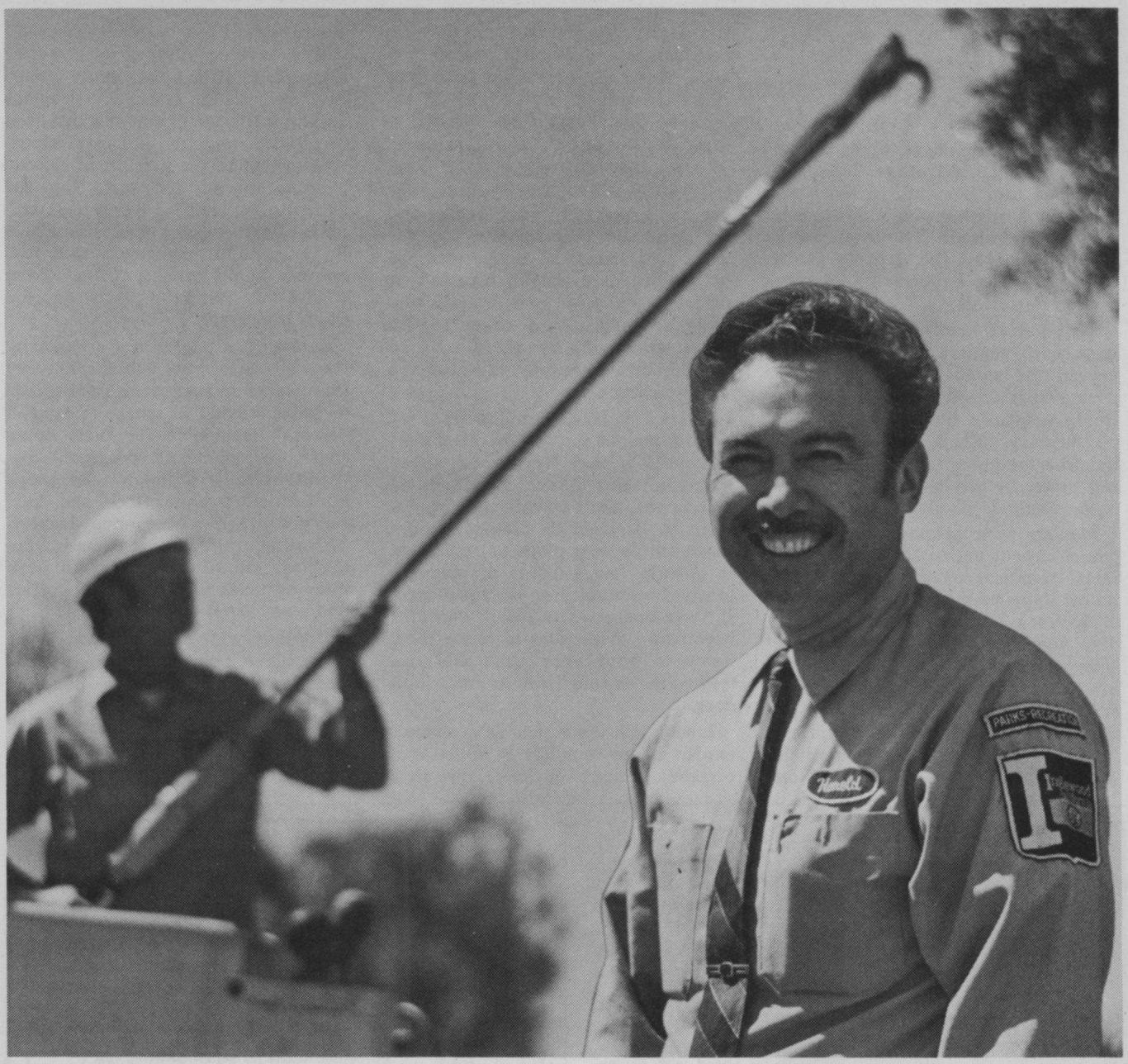

Harold Martinez, Department of Parks and Recreation for Inglewood, California, says his Limb-Loppers last up to 12 years.

"This Limb-Lopper is 10 years young."

Ten years young, and still going strong.

Equipment for the city of Inglewood, California, is amortized over a 7 year period, but Harold Martinez, Street Tree Foreman, often finds his Limb-Loppers lasting as long as 12 years.

He has found that Limb-Lopper saves him up to 50% in man-hours. By not having to replace his equipment nearly so often, Mr. Martinez saves plenty on his budget.

Ask your representative about the Limb-Lopper line of power pruners and saws. Check the rugged durability, power, performance, and handling ease for yourself. If you want more reasons why Harold Martinez specifies Limb-Lopper, clip our request form or call us at (213) 945-1077.

☐ Have a Limb-Lopper representative contact me.
☐ Send me more information about the Limb-Lopper line of power pruning equipment.

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Title_____

Address_____

City_____ State_____ Zip_____

Limb-Lopper

Limb Lopper Co., Inc. 11845 Burke St.
Santa Fe Springs, California 90670
Phone (213) 945-1077

For More Details Circle (124) on Reply Card

SECURITY IN YOUR BUSINESS

(from page 18)

sitive pneumatic signal tubes placed across the road in front of the workshop can also be used. In more sophisticated operations, investment in a closed-circuit television camera may be just the item to guard a truckload of expensive turf protection chemicals.

Cooperative business plan. Engage with several local firms who are in the same area as yours to periodically check on all businesses. Being helpfully nosey may prevent a burglary. Then too, should a neighboring owner find a crime taking place, he can use his own business telephone to alert the police.

Identify your property. This is of prime importance. Make note of serial numbers of large and small items. Keep these in a security vault or lockbox. Buy a set of marking dies and stamp each item with a code, name or other identifying mark. It's worth the investment! In certain areas these codes can be filed with local police. For vehicles, it's not a bad idea to make a small inconspicuous mark somewhere on the vehicle, preferably on the underside. It could mean the difference between ownership and loss if a vehicle is recovered which resembles the one you are missing.

Be suspicious. We are our brother's keeper, but today you must take measures to insure that your brother keeps only what is his, and not yours. Individuals found in the work area should be firmly escorted off the property. Establish rules that no friends of employees are allowed to visit. Don't loan a chain saw to the neighbor of a client. He may be a neighbor who is moving out of the state tomorrow.

There's nothing wrong with questioning people as to their intentions, especially if they have your equipment in their hands. Speaking of equipment, don't permit your equipment to be used on off-duty hours at an employee's place of residence. It quickly has a habit of inadvertently becoming lost or misplaced. If your operation is small, consider permitting employees to bring their items to your shop area and use tools, etc. as one firm in Maryland does.

Inside job. As much as we don't expect it nor look for it, there is a certain amount of burglary that takes place by employees, themselves. A tree climber may switch a new saddle for a personally owned but used saddle gained by previous employment. A chain saw in need of repairs suddenly and mysteriously disappears. Or a hank of manila rope wears out too fast. Yes, the substitution game is crafty and employees can become professionals at it. One employer recently said that he was being robbed "blind" from **within** his company. How do you put a stop to it?

One way, although not necessarily the best, is to label and mark every item in your inventory. Make lists of items carried in trucks and make drivers responsible for their being there. For chemicals, assign the distribution to a foreman who keeps all pesticides under lock and key. Provide work clothes and lockers. This discourages driving home from the last job. Have employees park their vehicles in front of the office and away from the work area.

Another way to reduce employee pilfering in areas where high value items are located is by bonding. While this may be satisfactory for some, others in the "Green Industry" find that it discourages potential

(continued on page 32)

11 NEW FEATURES make HI-RANGER® even better!

Already No. 1, now HI-RANGER moves out far ahead with design features that give owners and operators the safest, most productive personnel towers for any overhead work. Get the facts. Send for your new "5F" Catalog today . . . you will appreciate what we can do for you.

HI-RANGER Aerial Towers meet the "American National Standard for Vehicle-Mounted Elevating and Rotating Work Platforms ANSI A92.2-1969," as required by the Williams-Steiger Occupational Safety and Health Act of 1970; Part 1910, Occupational Safety and Health Standards; Section 1910.67.

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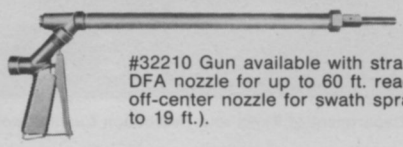
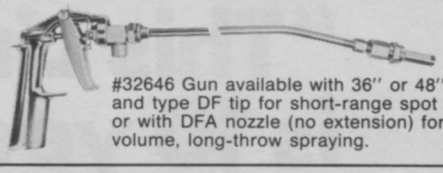
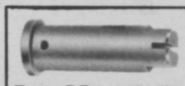
Delavan foam spray equipment reduces drift up to 60%



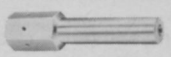
#32210 Gun available with straight stream DFA nozzle for up to 60 ft. reach, or with off-center nozzle for swath spraying (up to 19 ft.).



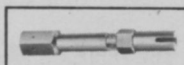
#32646 Gun available with 36" or 48" extensions and type DF tip for short-range spot spraying, or with DFA nozzle (no extension) for low volume, long-throw spraying.



Type DF nozzle tip for spray rigs or #32646 gun (above).



Type DFA nozzle for either of the above guns.



Type DFOC off-center nozzle for #32210 gun.

Now, with low-drift Dela-Foam spray products, you can spray with safety on those days of low to moderate winds. Foam spraying also has other advantages to offer. Send for free catalog and price list.

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Meet the sure-footed track star that goes where wheeled vehicles fear to tread.

Through muck and mud, slop and slime – you can't stop the Brush Cutter.

Built to make it farther. Faster. Up 40° slopes. Around towers in a 12-foot circle.

Diesel powered. With rubber-belted tracks reinforced by steel cables for strength. And a toboggan-type watertight chassis.

Up front, two rugged rotary mowers clear an 8-foot swath through the underbrush. All clearly visible from the centre-mounted cab.

Before your next job gets bogged down, give Brush Cutter the business. Contact your local Bombardier distributor.

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Muskeg® Brush Cutter

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Everything you need for complete arborist service.

American Arborist offers a full line of famous quality tools, supplies and equipment for tree care. Names you know— Bashlin, Asplundh, Corona, Buckingham and hundreds more. Most items in stock for immediate shipment. Depend on the first name in arborist supplies—American.

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You are invited to attend the annual conference of the International Pesticide Applicators Association. The program will include reports on research, training techniques, sales promotion and better office management. A tour of leading spray businesses is included. See new equipment.

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Delegate Registration: $30.00 Single; $37.50 Couple

International Pesticide Applicators Assoc. Inc.
221 First Ave. West
Seattle, Washington 98119

Pre-Registration Form

Name .....

Address .....

City ..... State .....

Company Name .....

Check ☐ Single $30.00
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IPAA ANNUAL CONVENTION, Aug. 15-18

Send To:
Chuck Bradshaw
2710 Monument Ct.
Concord, Calif. 94522

For More Details Circle (163) on Reply Card

employees. It's a good idea to have a pseudo-background check made before employees are hired. At least, check references, if any.

Bear in mind throughout your security plan that fire protection and security must go hand in hand. Plan fire exit routes that are workable. Some patented security systems have built-in fire alarms. (Incidentally, a fire alarm bell can be used to scare away burglars.) Develop your security system so that fire fighters will not be deterred by inaccessible locks or security gates that must be destroyed before entry is gained.

Security in your business is not the final objective in doing business. Rather, it must be implemented as a means of protecting your investment. The professional thief usually can outfox even the best devices if he desires. Your approach to security must be developed as a deterrent.

Park Irrigation Problems Toro Brochure Solves

For a park or recreation area to be an attractive, healthy, green environment for people, it must be watered adequately and consistently. And that can be accomplished with a minimum of manual attention, while actually conserving water, with the use of modern automatic underground irrigation systems, according to a new brochure from the Irrigation Division of The Toro Company.

The Toro brochure, titled "The Innovators Solve Turf Irrigation Problems in Park and Recreation Areas," points out that turf areas serving different purposes, such as picnic grounds and open play fields, require varying amounts of water at varying intervals.

Those variables can be accommodated with precision and efficiency, regardless of topography, soil or climatic conditions, geographic location or seasonal changes, with modern automatic irrigation systems, the brochure states.

According to Toro, irrigation equipment—including master controllers, satellite controllers, valves and sprinkler heads—can be matched to the specific watering needs of "any park or recreation area, under any given set of circumstances, present or future, anywhere, anytime."

Copies of the brochure may be obtained by writing to: Dept. PRA, Irrigation Division, The Toro Company, P.O. Box 489, Riverside, Calif. 92502.

FERTILIZE TREES IN ONE THIRD THE TIME AND ABOUT HALF THE COST USING JOBE'S TREE FOOD SPIKES.

Here's proof when fertilizing a 5" tree:

Old Method[1]

Bulk 16-8-8 fertilizer—$70/ton
(Average price throughout U.S.)

2 lbs./inch of trunk diameter = 10 lbs. × 3.5c/lb.	$ .35
½ hr. labor @ $4/hr.	2.00
Labor and materials	$2.35

$2.35 ÷ 5" tree = 47c/inch of diameter
No allowance made for depreciation, amortization, breakage of auger, mistakes, etc.

[1] *Using electric auger.*

Jobe's Tree Food Spikes Method[2]

5 spikes 16-8-8 fertilizer—22c/spike

1 spike/inch of trunk diameter	$1.10
5 min. labor @ $4/hr.	.33
Labor and materials	$1.43

$1.43 ÷ 5" tree = 29c/inch of diameter, based on 20 case order.

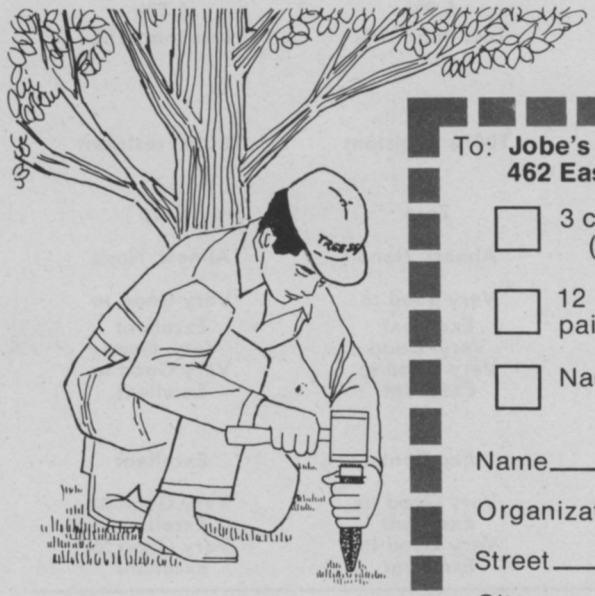
[2] *Based on results of university field tests and recommendations.*

Professional tree and turf men who use Jobe's Tree Food Spikes can save 50% and more in labor and materials.
Recommend the fall fertilization of trees now to your customers. Save time and money by using Jobe's Tree Food Spikes. Order from your local supplier—or write for his name.

Jobe's® The instant meal for hungry trees.

TREE FOOD SPIKES

International Spike, Inc., 462 East High Street
Lexington, Ky. 40508



To: **Jobe's Tree Food Spikes**
462 East High St., Lexington, Ky. 40508

☐ 3 cases Tree Food Spikes @ $30 per case, f.o.b. Paris, Ky. (105 spikes—40 lbs. per case)

☐ 12 cases Tree Food Spikes @ $25 per case, freight prepaid.

☐ Name of local supplier

Name _____
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Transplants Large Trees In Minutes ...Works All Day For Pennies An Hour

"Instant Shade!" Popular Vermeer Model TS-44A transplants up to 4" diameter trees in minutes! Four hydraulically-operated, high-tensile steel spades form maximum size tree ball 44" in diameter, 40" deep. Tows easily behind small truck or tractor.

If you own one of The Diggin' Dutchman's TS-44A Tree Spades, you might already have discovered that it transplants large trees all day long for just pennies an hour. Requires no coffee breaks, no lunch hours, no overtime wages . . . just an occasional tank of gas to keep it hydraulically-operated spades digging, balling and transplanting without even a pause. Saves you thousands of dollars annually because one man can handle the entire job in minutes, much faster than a whole crew of laborers (at more than $? ? ? per hr.). Interested? Write The Diggin' Dutchman today or, better yet, call him (515/628-3141) NOW for a FREE demonstration of any Vermeer Tree Spade. Vermeer Mfg. Co., 7207 New Sharon Road, Pella, Iowa 50219.

THE DIGGIN' DUTCHMAN
VERMEER TREE EQUIPMENT DIVISION

For More Details Circle (122) on Reply Card

ROPE SAFETY *(from page 12)*

is by actually loading it. But if a rope is getting weak and you put weight on it, you'll weaken it further. So that system wouldn't be very fair. As far as a rule of thumb on use life of a rope, I would not consider using a rope as a safety line that was over a year old. A brand new manila rope, of course, if it's stored properly has almost an indefinite life. But proper storage is a pretty hard thing to come by, particularly in a smaller business.

WTT: Is manila rope treated?

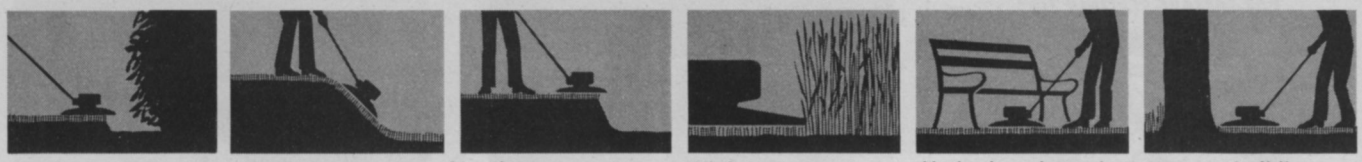
Liebenauer: Since manila rope is an organic material, it's self-

(continued on page 36)

Table of characteristics in the comparison of one inch rope made from manila, nylon Dacron polyester and Esterlon polyester.*

Description	Manila	Nylon	Polyester Dacron	Polyester Esterlon
Strength Characteristics				
Tensile Strength Dry	9,000 lbs.	25,000 lbs.	22,000 lbs.	20,000 lbs.
Working Strength	1,800 lbs.	2,890 lbs.	2,450 lbs.	2,220 lbs.
Repeat Loading	Poor	Good	Excellent	Good
Elasticity-Stretch				
Permanent Elongation At Working Loads	4.8%	8.0%	6.2%	6.0%
Temporary Stretch Under Load	5.0%	16.0%	5.9%	6.5%
Water Absorbed Into Fiber	Up to 100% of weight of rope	Up to 9%	Less than 1%	Less than 1%
Resistance to Rot, Mildew & Marine Organisms	Poor	100% resistant	100% resistant	100% resistant
Deterioration				
Due to Aging	About 1% per year	Zero	Zero	Zero
Due to Sunlight Exposure	Some Slight	Some Slight	Almost None	Almost None
Resistance to Chemicals				
To Acids	Very Poor	Fair	Very good to Excellent	Very Good to Excellent
To Alkalis	Very Poor	Excellent	Very Good	Very Good
To Solvents	Good	Good	Very Good to Excellent	Very Good to Excellent
Wear				
Resistance to Surface Abrasion	Good	Very Good	Excellent	Excellent
Resistance to Internal Flexing Wear	Good	Excellent	Very Good to Excellent	Very Good to Excellent
Resistance to Cutting	Good	Excellent	Very Good to Excellent	Very Good to Excellent

* This table was compiled from "Table of Natural and Synthetic Fiber Characteristics" developed by Wall Rope Works, Beverly, New Jersey.

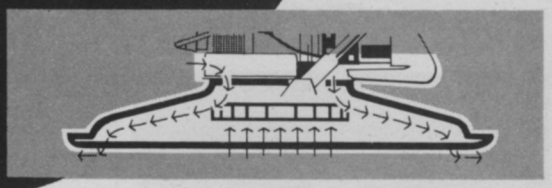


Overhanging edges, steep slopes, traps, and bunkers *High, wet grass* *Under benches, close to trees, buildings*

Problem spots trimmed quick and clean with...

Flymo®

the world's only airborne mower



Riding on a controlled cushion of air, the Flymo mower cuts smoothly through the toughest jobs. In wet grass or dry, long or short, and on flat surfaces or steep inclines, Flymo maneuvers easily, trims clean and close.

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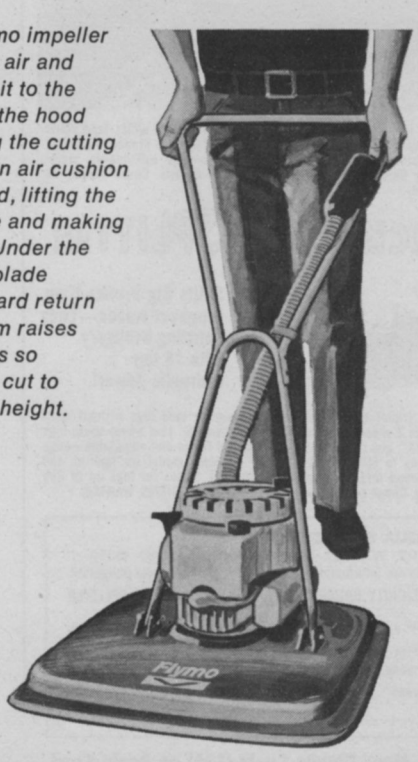
Designed for safety and ease of operation, the Flymo is ruggedly constructed throughout. And a nation-wide network of distributors and dealers stands behind Flymo with prompt, dependable service.

Flymo — a cut above.

The Flymo impeller sucks in air and presses it to the edge of the hood covering the cutting blade. An air cushion is formed, lifting the machine and making it float. Under the cutting blade the upward return airstream raises the grass so that it is cut to uniform height.



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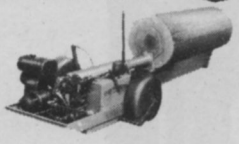

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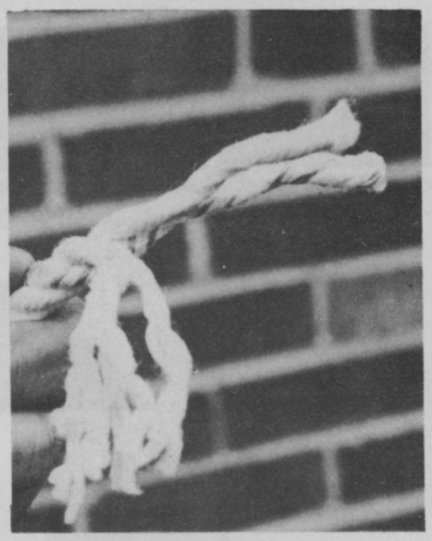
Manila rope is composed of fibrous strands that can break or become worn. Safety lines should be inspected daily and stored properly at night.



This is Esterlon polyester rope. Note the frayed strands. They tend to stay together to form a tight bundle of fibers. Color is lighter than manila.

recycling. That's a problem. Rope is usually treated to reduce rot and internal friction. This treatment lengthens its life but constant flexing of the rope tends to break the fibers and reduce their size. In addition, by flexing, a rope has the tendency to wear the edge of the fiber making each fiber smaller. Smaller fibers won't cling together quite so tightly and thus the rope loses it's strength. A rope manufacturer treats manila rope to reduce the moisture absorption of the rope and also lubricate the fibers. (If a rope absorbs water and swells, it is difficult to tie and untie knots.)

WTT: Up to now, manila rope has been somewhat the standard of ropes for arborists. Has the advent of synthetics made inroads into this field?

Liebenauer: Rope manufacturers looked around to find a better rope to the inherent weaknesses of manila. They initially tried nylon rope. At first it looked like it was going to be an ideal rope. Very quickly it became obvious that nylon had many shortcomings. Nylon is elastic; it'll stretch. When a climber tied himself into a spot he found out that he was sagging. Or if he was out on a limb with the idea of making a cut, he couldn't hold himself in a particular position. The elasticity did offer the safety advantage of a cushion effect in case of a fall. But nylon rope didn't handle as well as manila rope. It also had a tendency to glaze through a crotch in a tree. Eventually nylon rope almost dropped out of the picture completely.

But the rope companies didn't give up. They developed polyester fibers that more nearly suited the job. The two most commonly used polyester fibers are Dacron and Esterlon. These seem to be the answer to the rope problem for the arborist. The various characteristics of polyester rope fibers are very similar to manila rope.

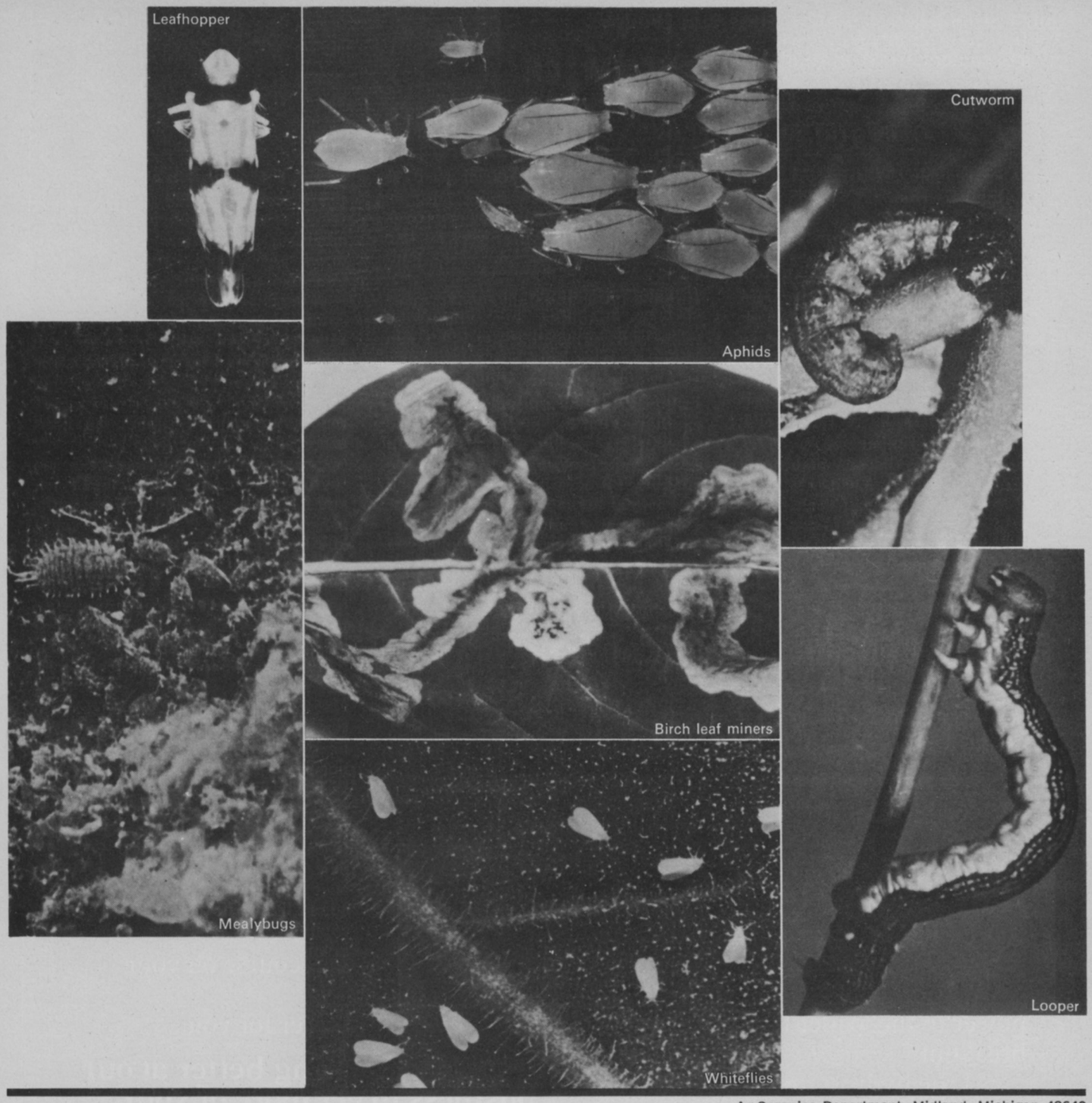
WTT: Are combinations of polyester filament fibers used in rope manufacture?

Liebenauer: Sometimes other synthetic fibers are blended in the rope to alter the handling and feel characteristics. These ropes have all proved to be satisfactory in tree care work. The big problem, however, is user resistance to synthetics.

WTT: Can you explain that more fully?

Liebenauer: A man becomes used to using manila rope. He doesn't want to change. There's always some resistance to change, regardless of what the change may be. Early nylon rope was not satisfactory as far as the tree care business was concerned. Many arborists still recall the deficiencies of nylon. Modern synthetic ropes are actually far superior to manila rope. But because they don't look or feel like manila users have a resistance to them.

(continued on page 44)



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Only one compact loader can run this obstacle course. Our 3200A.

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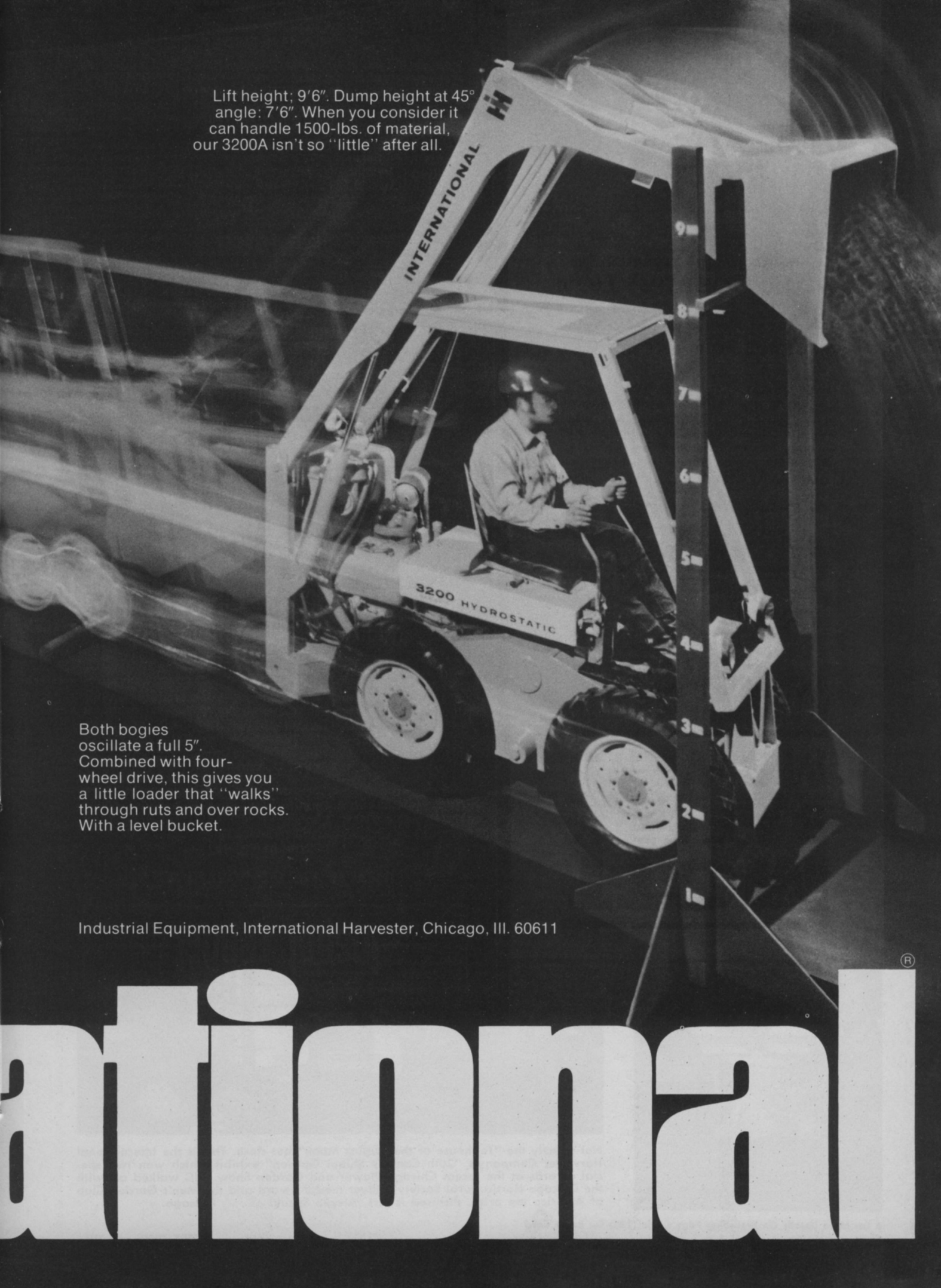

Lift height; 9′6″. Dump height at 45° angle: 7′6″. When you consider it can handle 1500-lbs. of material, our 3200A isn't so "little" after all.

Both bogies oscillate a full 5″. Combined with four-wheel drive, this gives you a little loader that "walks" through ruts and over rocks. With a level bucket.

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CLEAN AIR MACHINES is the new logo of the Florida Nurserymen & Growers Association. Here, Raymond Brush, administrator, American Association of Nurserymen speaks to FNGA members at the dedication in the Palm Beach, Florida.

It's called "Operation Eyesore," a project in environmental improvement in Manchester, England. Here, parks department operators pause with new Trojan II heavy-duty riding mowers by Toro. Object of "Eyesore" is to make new playgrounds and parks, plant trees, and landscape neglected public land. Toro says that Manchester now has 32 Toro units.

Green Industry Newsmakers

PEOPLE PLACES EVENTS

This is not the craters of the moon. It's a bluegrass sod field weakened by spring flooding and low temperatures. Results? A severe case of Fusarium blight. This disease has been reported frequently this year.

A ROSE FOR A ROSE. A new rose, developed especially for the 150th anniversary of the San Francisco-Solano Mission in Sonoma, Calif. is being presented to Mrs. Richard M. Nixon by Cong. Don H. Clausen. It will be planted in the White House rose garden.

Not exactly the "Teahouse of the August Moon" but close. This is the International Harvester Company's "20th Century Shibui Garden" exhibit which won two special awards at the recent Chicago Flower and Garden Show. IHC walked off with the Chicago Horticultural Society's Silver medal award and the Men's Garden Club of America top prize. Pictured is Mrs. Atsuko Suzuki of . . . Chicago.

For More Details On Preceding Page Circle (126) On Reply Card

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WORMS, WORDS AND WILLINGNESS

(from page 23)

has three primary advantages. "The first," he said, "is timeliness. The oil formulation can be applied one quart undiluted per acre. That contains one pound of the active ingredient. Compared to diluted or water formulations, we could thus treat four times more acreage per load. This enabled us to treat 10,000 acres in two weeks using only two helicopters. Since we had to contract for extra helicopters. and pilots, we were able to reduce our costs and pass along the savings to the towns."

"Secondly," Canning continued, "the material saves handling. We got bulk delivery of the product in tank trucks direct from the point of manufacture. The tank truck went right into our warehouse and pumped into our nurse tanks."

The third advantage cited by Canning was good control. "From the customers point of view," he said, "this is the most important benefit of all. Sevin-4 Oil remains on leaf surfaces despite heavy rains in the spring. It provides consistent performance — and that's what gets you repeat business year after year."

Keeping the spray material on the trees is also important from an ecological standpoint, according to Emile Ollivier. "Even with all the rain we had during the spraying period, we had no complaints where we sprayed. There were no fish kills and no apparent effect on wildlife," he said.

About the only complaint Ollivier did hear during the successful spray program was a far cry from complaints he had heard earlier from environmentalists. Some residents were unhappy that their property could not be sprayed. Because state regulations prohibited spraying the heavily wooded, sparsely populated areas, many individual property owners within these areas were missed in the spray program. Ollivier received, in fact, over 400 requests for spraying from residents within the out-of-bounds areas.

"That's one of every eight people in Orleans," he noted. "Last year during the big anti-spraying debate, people signed petitions against spraying. This year, after the big infestation, the same people were begging us to spray." □

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Mallinckrodt Chemical Works is introducing Fungo—50 brand turf fungicide, a broad spectrum, systemic agent for control of a wide variety of turf diseases.

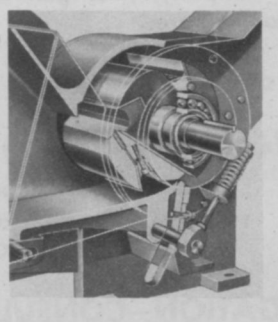
According to an announcement by Stan Frederiksen, manager of specialty agricultural products, Fungo controls most of the important diseases which attack turf. At modest treatment rates, it controls Brown Patch, dollar spot, Fusarium patch (pink snow mold), and copper spot. At somewhat higher rates, carefully drenched in, Fungo—50 readily controls Fusarium blight (Fusarium roseum), stripe smut, and powdery mildew.

Fungo may be tank-mixed with Koban fungicide to achieve a even broader spectrum of control, including pythium, or with Thiramad, maneb, or zineb for control of leaf spot and/or melting out diseases during spring and fall.

Highly effective, and quite economical in use, FUNGO is safe on the finest turf. Rates as high as eight times the minimums have thus far produced no turf damage or discoloration.

EXCLUSIVE SPRING-SUPPORTED FEED PLATE

Feed pressure is continuously adjusted to size and hardness of wood. NO FLYWHEEL NEEDED, faster chipping at lower RPM, less stress on component parts.



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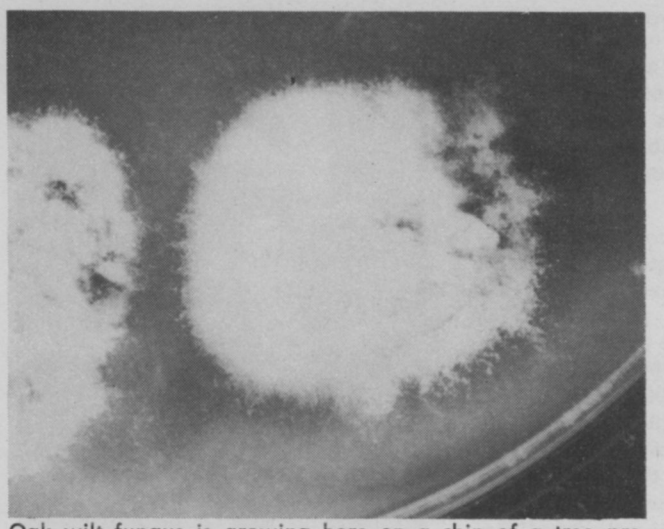
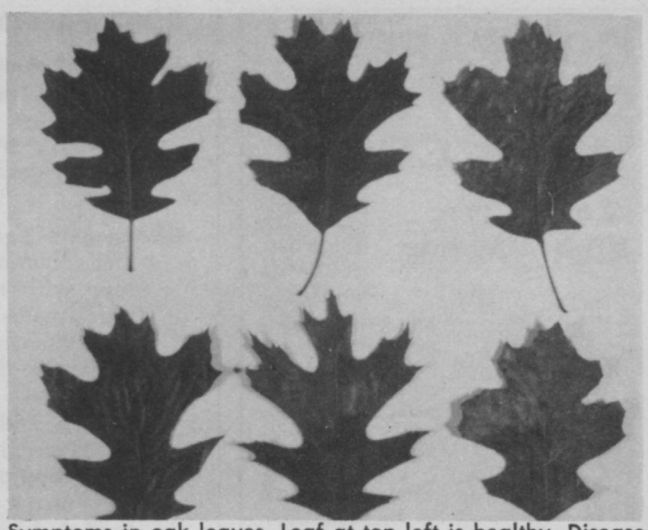


Oak wilt fungus is growing here on a chip of a tree previously infected. This is one of the cultural techniques used to identify the disease.



Symptoms in oak leaves. Leaf at top left is healthy. Disease progresses (l-r) until leaves become brown and lifeless as in the lower right.

TREE DESTROYER *(from page 20)*

Close observation and removal of the infected areas or the entire diseased tree must be accomplished to prevent infection of healthy trees.

One of the best guards against disease is a rapidly growing tree. This can normally best be accomplished in the forest stand by removing the poor trees and allowing the remaining trees to maintain a high degree of vigor. Valuable shade trees and ornamentals should be planted on the proper site, be relatively free of competition and be given adequate fertilization and water.

To further clarify the host/disease relationship that may occur let's look at oak wilt disease in detail. As an illustrative disease, it will enable us to understand the concept of a tree disease more thoroughly. It will also help in initiating programs to reduce the loss of valuable plantings.

Oak wilt is thought to be native to the United States. It is not known to occur in any other country.[1] It was first reported in 1942. The fungus now has spread from Wisconsin to as far south as Texas, east to Pennsylvania, and west to the Great Plains.[27]

Oak wilt disease is caused by a fungus, *Ceratocystis fagacearum* which invades the water-conducting vessels of the sapwood through fresh wounds or by root grafts connecting healthy and diseased trees. The fungus has been found affecting and causing the death of all our native oaks as well as chinkapin,[9] Spanish and Chinese chestnut,[8] ash,[12] beech,[2] dogwood,[2] hophornbeam,[2] hickory,[2] sassafras,[2] sourwood,[2] and wild cherry.[12]

The symptoms or plant expression to the disease organism tend to vary little throughout the United States. The first symptom observed is a crinkling of the leaves with the leaf stem turning black. Leaves at the top of the tree or towards the tip of lateral branches nearly always wilt first. The affected leaves become dull and somewhat lighter in color as compared to healthy ones. Upper leaves turn brown at the tips and margins. This produces a sharp line between the healthy tissues and the infected, killed reddish-brown tissue.

This reddish-brown or bronze color progresses downward in the leaf toward the petiole. The affected leaves curl inward with the petiole drooping and turning black. Young leaves may not show the reddish-brown color but may just turn black and drop from the tree. Infected trees may defoliate any time after infection occurs, but usually they defoliate four to five weeks after the first symptoms are observed.

Trees in the red oak group usually die in the first year[23] while white oaks may take years to die.[5]

(Editor's Note: Research conducted by the University of Wisconsin on oak wilt indicates that in some cases white oaks recover after one season of infection. Microscopic examination shows that new wood has been laid down over the infected

(continued on page 47)

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ROPE SAFETY *(from page 36)*

WTT: Let's look at some of the advantages of modern synthetic rope. How does it compare in strength, wearability, temperature, water absorption and use life?

Liebenauer: Let's compare a one-inch diameter standard manila rope with a one-inch diameter rope made of polyester filament fibers. Dry tensile strength of manila is 9,000 pounds compared to 22,000 pounds for Dacron and 20,000 pounds for Esterlon. This makes the polyester rope over twice as strong.

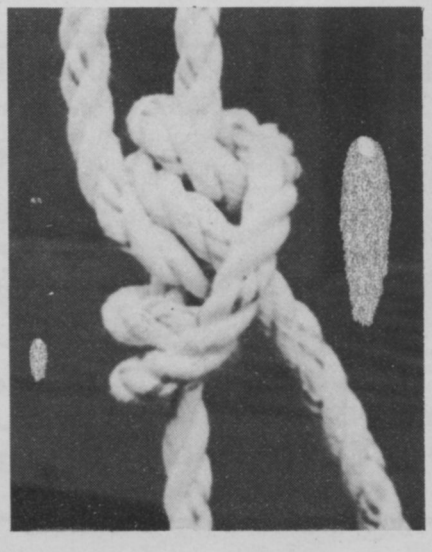
In terms of wear, manila is good, but polyester is excellent. It can absorb shock loads far better than manila and the repeat loading characteristics of polyester make it ideal for use in lowering limbs.

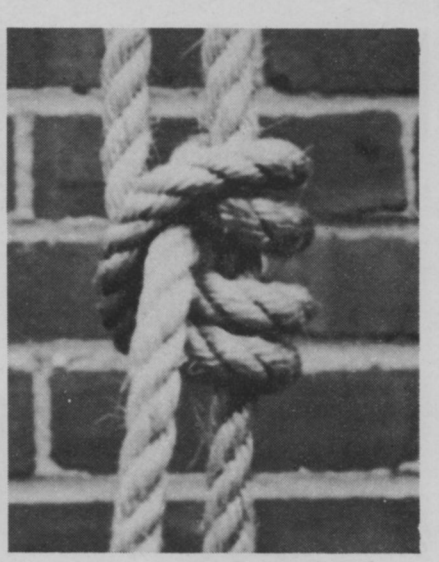
Temperature properties of polyester are far superior to manila. A manila rope running quickly through the crotch of a tree will rapidly heat up. It loses strength in the rope as it heats, but you don't see this and think that nothing has happened. Polyester fibers resist high temperatures. The tendency to glaze a tree with a polyester rope will be less because there is less heat generated.

Manila rope is poor in terms of water absorption. It will take up to 100 percent of it's weight in water where polyester rope will absorb less than one percent.

Use life of manila rope is generally poor. It's affected by rot, mildew and other organisms. Polyester rope is essentially 100 percent resistant. It's use life is practically indefinite.

Even new Esterlon rope makes a knot that holds. Polyester fibers can be flexed many times without damaging the rope.





Manila rope has been the standard among arborists for years. Newer fibers such as Dacron and Esterlon are beginning to replace manila rope.

WTT: What about color? Does that make a difference?

Liebenauer: Synthetic ropes are mostly white, whereas manila ropes have a golden color. The dark brown manila rope has been treated with more oil than a natural manila rope.

I think it is fair to mention at this time that management should insist that the worker give synthetics a fair trial. The men who use this rope should be educated to the fact that synthetic is so superior to manila that they shouldn't consider anything but changing over.

OSHA laws are going to require that a man use this type of rope. I am quite certain that this ruling is coming very soon.

WTT: What other advantages are in store for the user of a synthetic rope?

Liebenauer: A climber who uses a three-fourths inch manila lowering line will find that a one-half inch synthetic rope will hold the same load. In other words, a man can work with a smaller rope and have greater strength plus the fact that synthetic rope will take repeated loading shock.

A polyester rope used for climbing has a sort of tacky feel on the outside surface. Actually

(continued on page 46)

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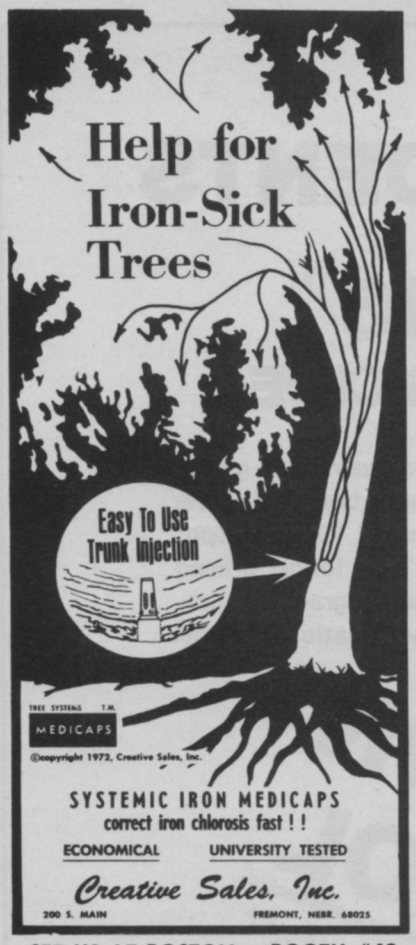

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it is a wax used to lubricate the rope, but this wax gives this tacky feeling and allows a man to hang on to the rope more easily. After the rope has been used a bit it gets a slightly fuzzy surface which makes it excellent to handle. A manila rope after the same amount of use develops little slivers of fiber which can get into a climber's hands.

WTT: Can you use synthetic ropes in the construction of saddles?

Liebenauer: This gets back to one of the accidents which I mentioned earlier in our discussion. You recall that a man fell from a tree because his manila rope broke at a knot. Actually this knot was located on the man's saddle where it had been continuously tied since the saddle was constructed. When the knot broke the saddle failed and the man fell. Saddles are made out of leather with a rope reinforcement. In our business we haven't sold a saddle or let our own men use one that had any manila rope in it for over three years. We insist on saddles with synthetic rope reinforcement. Nobody can afford to have an accident.

WTT: Does synthetic lend itself to leather better than manila?

Liebenauer: Not necessarily. We have found no difference between the two. The single factor against using synthetics is in braiding the eyes or the temples at the end of the rope. You can't braid synthetic ropes, quite as readily as you can manila. When you finish a braid, you must hold it together with a wire clip and fiberglass tape to keep it from unraveling.

Synthetic rope has a memory. It does not want to have to change in lay other than when it was made. This is the nature of most plastics — they revert back to the original form or twist. We have never had any trouble, however, with a failure where any eye was braided into a synthetic rope.

WTT: What is the maximum length of life of synthetic rope when used in normal day-to-day operations?

Liebenauer: We don't know how long they will last. Some of the early users of nylon ropes are still using these ropes. The biggest factor affecting the use of synthetic rope is cost. This rope is more expensive. (In the case of accidental cutting with a saw or axe, a climber quickly finds that synthetic rope cuts just as easily as manila.) Synthetic ropes cost between 2½ to 3 times as much as manila rope initially. But at the same time they have 2½ times as much initial strength which remains constant. And the life expectancy is indefinite. So actually it is a better investment.

WTT: We take it that you are an advocate for synthetic rope. Does this mean that more arborists should be considering this type of rope?

Liebenauer: More arborists are definitely moving to synthetics. The only resistance is change itself and the fact that some arborists are working on a limited budget and cannot afford the added initial investment. However, the added investment in a period of two years will more than pay for itself. At the end of two years, unless you have physically damaged synthetic rope, it will still be good. Anyone who has used a manila rope over a year is out of their mind. I wouldn't trust it longer than that.

WTT: You have given us a convincing argument for using synthetic rope. Thank you for your interest and your concern for safety in the tree care industry. □

Is Parker Sweeper Booklet "Lawn Grooming Made Easy"

Parker Sweeper Company has prepared an eight-page booklet entitled "Lawn Grooming Made Easy."

The booklet was written for Parker Sweeper by Dr. Robert W. Schery, director of the Lawn Institute.

The booklet contains information on new varieties of grasses and how to cope with common maintenance problems. Reviewed are such areas as fertilization, watering and pest control.

The booklet also gives instructions on how to best use mechanical aids in lawn care, particularly in controlling thatch.

"Lawn Grooming Made Easy" is available without charge by writing Parker Sweeper Company, P. O. Box 720, Springfield, Ohio 45501.

TREE DESTROYER *(from page 43)*

annual ring. The fungus is thus walled off, or "buried" and the tree recovers.)

Little is known about the penetration of the oak wilt fungus into the tree. It has been reported that the fungus probably needs a wound caused by man, insects, animals, weather, or any number of ways to gain entrance into the tree,[10] and that infection can occur through the roots, stems, twigs, buds, leaves or flowers if a wound is present.

The fungus survives the winter by living in the bole of trees infected late in the summer. It later spreads throughout the plant and causes death the next spring; thus, serving as a source of innoculum for reinfection of other trees.[28]

The local spreading of the oak wilt fungus from one infected tree to another is thought to be caused in a great part by root grafts between the oak trees.[4,24] The fungus is also thought to be spread long distances as well as in the localized area by different species of beetles in the Nitidulidae family.[14,20,21,26] It has also been confirmed that the fungus can be spread by mites,[19] wind,[12] squirrels,[15] pomace fly,[3] tools,[17,22] and the fruit fly.

(It should be pointed out that oak wilt can often be confused with anthracnose. Early symptoms of each disease are quite similar. Anthracnose turns lower leaves brown and they curl badly in early June, but the trees are seldom killed. New foliage usually replaces the infected leaves by midsummer. The big difference is that oak wilt usually affects the upper part of the tree first while anthracnose attacks the lower leaves. Additionally, oaks are sensitive to changes in soil levels about their roots. Thus, in areas where new housing exists, trees may appear to have wilt symptoms but may actually be suffering from excavation, soil compaction or soil smothering. Cir. G1693, Oak Wilt In Wisconsin, G. L. Worf and J. E. Kuntz)

An effective control for the oak wilt disease has not been established to date. Local spread of the fungus by root grafts may be controlled to a limited extent by removing all the trees 100 feet on all sides of the diseased tree.[24,25] Killing all trees around an infected tree or trenching around infected trees to a depth that all root grafts between the trees are severed will normally control the local spread of the fungus.[24] A vigorous pruning of infected white oaks has been effective in saving individual trees.[13]

(Editor's Note: Investigative studies are underway to determine whether Benlate benomyl fungicide has activity on oak wilt. Because it is a vascular wilt like Dutch Elm Disease, it is believed that Benlate holds promise in the control of the fungus.)

Due to the slow rate of spread of the oak wilt disease, it does not appear to be of great economic importance. However, given an effective agent to spread the fungus, it has the potential to be of great economic importance. A forest in Illinois of 1800 acres was estimated over a period of eight years to have lost a total volume of timber equal to 50 acres of prime red oak.[11] Young,[24] in 1945, reported that at Pilot Knob State Park in Iowa 4,895 oak trees were killed by oak wilt with a resulting 38 percent mortality. Perhaps even more dramatic is the possibility of entire oak populations within a predominantly oak planted community being infected. The result could be more devastating than that created by Dutch Elm Disease.

Therefore, it can be concluded that on the national scale the disease

(continued on page 49)

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industry people on the move

JAMES L. LEVENTHAL, becomes product manager for Cushman golf cars, turfcare vehicles and Ryan turf equipment for Outboard Marine Corporation. He succeeds **JAMES B. DAHLBERG** who becomes regional manager-Cushman distributor sales in the southeastern United States.

* * *

RICHARD O. GRUNEWALD, elected marketing services manager for White Farm Equipment Company, a subsidiary of White Motor Corp. He will be responsible for advertising, sales promotion, public relations and product development activities for the company.

* * *

T. G. MORGAN, appointed product manager in the pesticide department of American Cyanamid Company.

* * *

DR. JAMES C. CAMPBELL becomes manager of the western research branch laboratory for the agricultural chemical division of FMC Corporation. **DR. IRWYN A. RAMMER** becomes senior research biologist for the company.

* * *

GERALD WEED, appointed west coast sales manager of Par Ex brand products for Swift Chemical Company.

* * *

ANTHONY J. ADOLFI, promoted from manager of public relations to director of communications for the agricultural division of Ciba-Geigy Corporation. He will be responsible for advertising and promotion, public relations and merchandising. He succeeds **N. B. DEMANCZUK** who has retired. **RICH G. HANSEN** replaces Adolfi as public relations manager.

* * *

MICHAEL H. SMALL becomes an irrigation specialist for residential and commercial markets on the west coast for Toro's Irrigation Division. **FRANK E. MOFFETT, JR.** appointed a field service representative for the midwest, based in Chicago. **JOHN Y. MORRIS,** becomes administrative/marketing assistant to **ROBERT LANDESMAN,** divisional manager of market planning and development. Toro says that all three positions are new.

* * *

JERRY O'DONNELL appointed ProTurf representative in Wisconsin for O. M. Scott & Sons. He was super of Nakoma Golf Club, Madison, Wisc. **MIKE REDMOND,** also a former super at Brightwood Hills Golf Course, New Brighton, Minn., joins the ProTurf group. **DOUG SMITH,** becomes a ProTurf technical representative in southern Indiana and Kentucky. He was foreman in charge of construction and maintenance at Brookshire Country Club, Carmel, Ind.

* * *

JAMES J. GALVIN, becomes executive vice president of the agricultural chemicals group of W. R. Grace & Co.

* * *

ROBERT HIGBY, named to the new position of administrative assistant to the general manager at the agchem-decco division of Pennwalt Corporation. **RAY ORITO** becomes controller for the division.

* * *

R. DAVID STILES, appointed a representative of the F. A. Bartlett Tree Expert Company. He will operate out of the Chattanooga office, a new district office for the company.

TREE DESTROYER *(from page 47)*

may not be of great economic importance, but in localized areas it could be very destructive. Should the disease infect timber resources, foresters could salvage the tree for market as the fungus does not destroy the structural qualities of the tree.[6,7]

We have taken a brief look at one disease affecting oaks and a variety of other tree species. Multiply the diseases into the hundreds and add in the hundreds of different species of plants affected by the diseases and the stage is set for a series of events that occur daily wherever trees grow.

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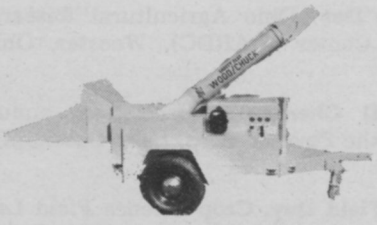

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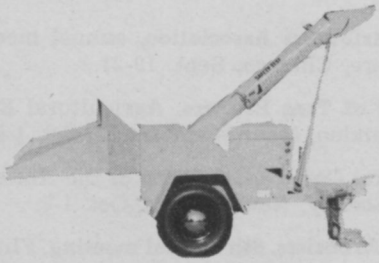

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—meeting dates—

South Carolina Turfgrass Conference, 4th annual, Clemson House, Clemson, S.C., July 10-11.

Ohio Chapter, International Shade Tree Conference, summer meeting, Benjamin Wegerzyn Garden Center, Dayton, Ohio, July 11.

American Association of Nurserymen, Radisson Hotel, Minneapolis, Minn., July 14-18.

Hyacinth Control Society, Hotel Monteleon, New Orleans, July 15-18.

American Sod Producers Association, annual summer meeting and field day, Denver, Colo., July 16-19.

Michigan Pesticide Association, summer tour, Shanty Creek Lodge, Bellaire, Mich., July 29-31.

Penn Allied Nursery Trade Show, Pennsylvania Nurserymen's Association, Allenberry, Boiling Springs, Pa., July 31-Aug. 2.

USDA Turfgrass Field Day, Agricultural Research Center-West, Beltsville, Md., Aug. 1.

Penn State Turfgrass Field Day, Joseph Valentine Turfgrass Research Center, Campus, University Park, Pa., Aug. 1-2.

Plant Science Day of the Connecticut Agricultural Experiment Station, Lockwood Farm, Hamden, Conn., Aug. 8.

International Shade Tree Conference, 49th annual meeting, Sheraton-Boston Hotel, Boston, Mass., Aug. 13-16.

International Pesticide Applicators Association, annual meeting, Marriott Inn, Berkeley Marina, Berkeley, Calif., Aug. 15-18.

North Dakota State Horticultural Society, annual meeting, Canada Department of Agriculture Research Station, Morden, Manitoba, Aug. 21-22.

Turf and Landscape Day, Ohio Agricultural Research and Development Center (OARDC), Wooster, Ohio, Sept. 11.

Midwest Agricultural Chemicals Association, annual meeting, Lodge of the Four Seasons, Lake Ozark, Mo., Sept. 12-14.

Michigan Turfgrass Field Day, Crop Science Field Lab, Michigan State University, E. Lansing, Mich., Sept. 13.

Lawn & Garden Distributors Association, annual meeting, Sheraton-O'Hare, Chicago, Sept. 19-21.

Course for Licensing of Tree Pruners, Agricultural Extension Centre, Brandon, Manitoba, Canada, Oct. 1-5.

American Horticultural Congress, meeting of the American Horticultural Society, New Orleans, Oct. 1-7.

Society of Municipal Arborists, 9th annual meeting, Flint, Mich., Oct. 3-5.

Tropical Plant Industries Trade Show, sponsored by the Florida Nurserymen and Growers Association, Diplomat Hotel, Hallandale Beach, Fla., Oct. 5-7.

Southwest Turfgrass Conference, Albuquerque, N.M., Oct. 11-12.

ROLLING BILLBOARDS — An effective technique being used by AMF Western Tool, division of AMF Inc. Twenty new trailers and ten cabs are used in the promotion to deliver products to distributors across the U.S. This AMF "piggyback" idea is hoped to generate increased sales of the company's lawn and garden equipment.

Griswold Bulletin Details Flow Control Valves

A new 8-page bulletin describing the Griswold flow control valve is now available from Griswold Controls.

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Copies of the new bulletin may be obtained by contracting Griswold Controls, 124 East Dyer Road, Santa Ana, California 92707.

Golf Course Builders Compile Directory

The first printed directory of golf course contractor-members of the Golf Course Builders of America is now available from the association's national headquarters in Washington, D.C.

It is believed to be the first list of leading golf course contractors carrying photos and biographical information about each.

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Single copies of GCBA's Membership Directory are available free upon request. Write: Harry J. Lambeth, Executive Director, Golf Course Builders of America, 632 Shoreham Building, Washington, D.C. 20005.

Speakers And Tour To Highlight IPAA Meeting

Program highlights of the annual International Pesticide Applicators Association include a variety of wellknown speakers. Dates of the meeting are August 15-18 at the Marriott Inn, Berkeley Marina, Calif.

According to Ralph V. Backstrom, executive director, convention speakers include Gary Ashenbrenner, an expert in office management, personal motivation and management: Dr. Robert Raobe, plant pathologist, University of California, Berkeley, whose topic will be systemic fungicides.

Other speakers are: Dr. David Schlagel, plant pathologist, University of California, Berkeley, who will speak on "Integrated Pest Control Techniques;" and, Dr. Karl Koehler, U of C entomologist, who will discuss "Implanted Systemics" and "Conifers."

Sales promotion and public relations will be the topic of Henry Engh, keynote speaker.

Delegates will tour the facilities of Terminator Products, Oakland, Osborn Spray Service, Danville and Killroy Pest Control Co. in San Jose.

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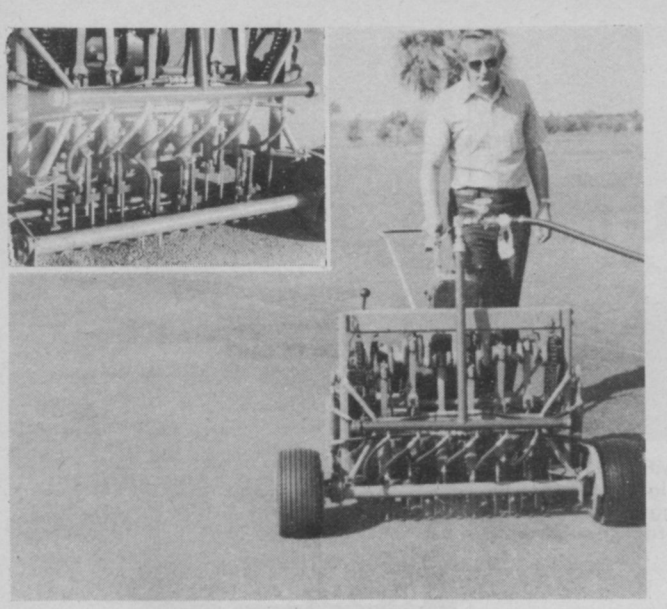

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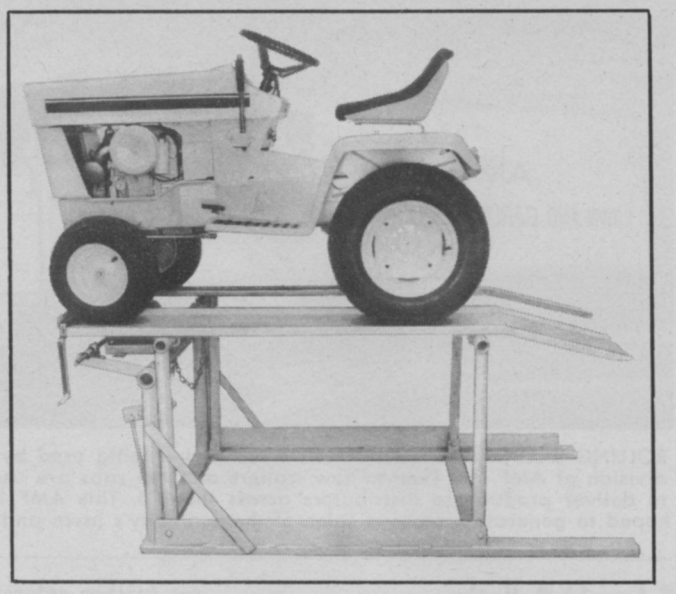

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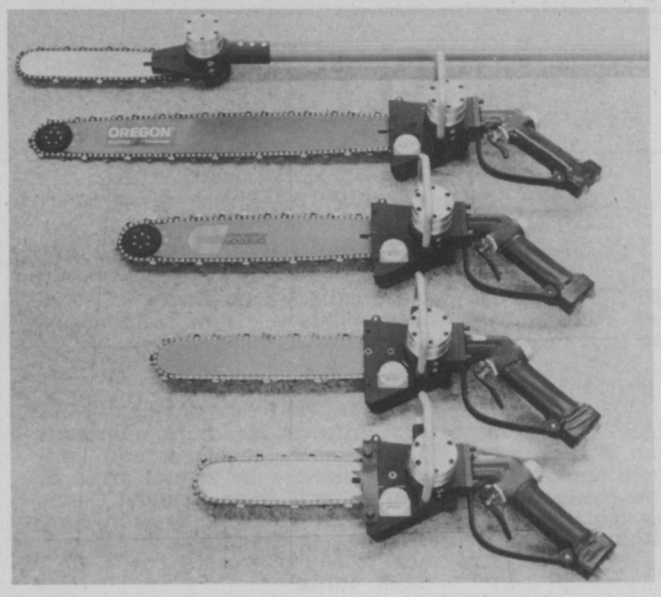
"Instant firewood" is now possible with the introduction of the LS-200 Log Splitter. It's a self-contained, 12 Hp unit that can split any log up to 30 inches long. A powerful overhead cylinder hydraulically wedges a heavy-duty cutting blade through the log under 22,000 pounds of splitting force. The blade, then automatically returns to the starting position for the next cycle. Unit can be towed behind any car, truck, or trailer. Other features include an electric start and a torsion axle for a smooth ride at highway speeds. For more details, circle (708) on the reply card.

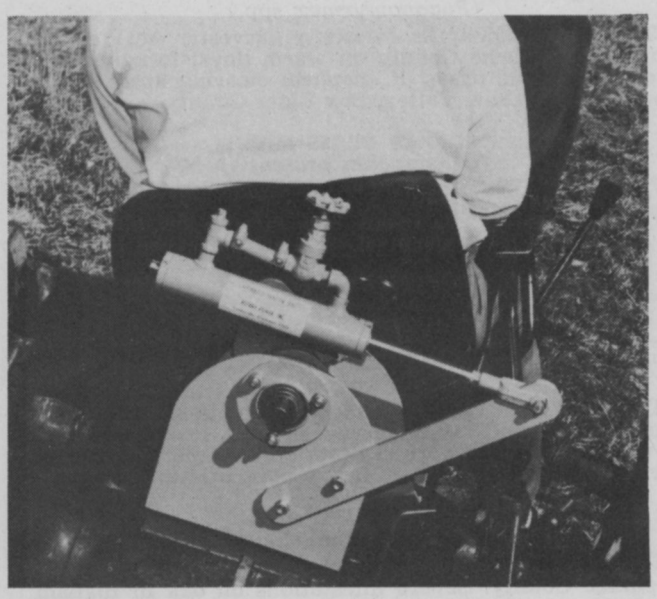


HYDRAULIC CHAIN SAWS: Ackley Manufacturing Co., Clackamas, Ore.

These hydraulic chain saws come in bar sizes of 12, 15, 18 and 24 inches. They're powered by hydraulic pressure from tractors, trucks and other hydraulically equipped vehicles. Motor which turns saw chain provides the highest power-to-weight ration of any hydraulic motor on the market, according to the manufacturer. Nothing else is on the saw but a trigger handle. Saw weights only six pounds without bar. But it gives the operator eight horsepower of direct drive. Features instant stop and start. For more details, circle (709) on the reply card.

FOUR-WHEEL DRIVE FRONT-END LOADER: Davis Manufacturing, Div. of J I Case Co., Wichita, Kans.

Scatback 430 is a compact four-wheel drive front-end loader with hydraulic articulated steering and hydra-static drive. It is powered by a 30 Hp engine, either gas or diesel. Infinitely variable speeds, both forward and backward gives the operator much latitude in operation. Instant forward/reverse is controlled by a single pivot dual foot pedal. Loader is self-leveling and has a 30 degree bucket rollback at ground level to handle heaped loads. Dump clearance is 109 inches at the hinge point. For added safety, operator sits aft of the lifting arms. For more details, circle (710) on the reply card.



HYDRAJUST TRACTOR SEAT: Rotary Power, Inc., Centerville, Tenn.

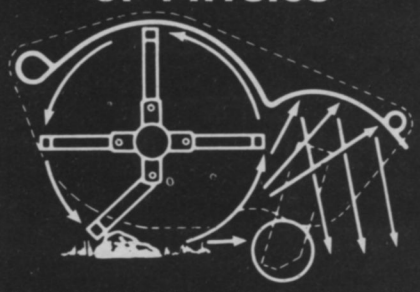
Slope mowing becomes safer and more efficient with this new and unique tractor seat. It is self-leveling. Seat and the tractor operator remain in a level position while the tractor is on a slope, even up to 33 degrees. Operator's weight automatically adjusts the seat to a level position, even though the tractor is at an angle. Allows the operator to keep both hands free for guidance and operation of his equipment. Seat is also adjustable forward and to the rear to comfortably fit individuals of differing heights. For more details, circle (711) on the reply card.

FIELD MARKING PAINT: C. B. Dolge Company, Westport, Conn.

Here's a tough, durable, latex emulsion paint formulated specifically for use on athletic fields, cinder tracks, tennis courts and other sports areas. It is available in white or field green. Paint is non-toxic and contains no skin irritants. It will not fade and will not stunt the growth of turf. Can be applied with a brush, roller or sprayer. One coat cover most surfaces. For more details, circle (712) on the reply card.

MOTT SAFETY MOWERS

A SIMPLE MATTER OF PHYSICS



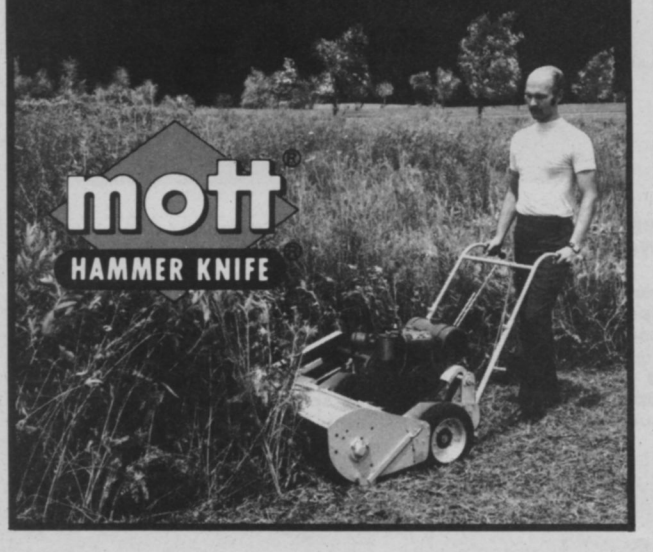
LOW IMPACT FORCE ACTION of the MOTT lightweight free swinging flail knives, their vertical mode of operation, the guard action of the roller and the deflecting features of the cutter housing all combine to make the MOTT Hammer Knife flail mower by far the SAFEST of all impact action mowers.

WRITE FOR YOUR FREE COPY OF
"Why I Believe in Flail Mowers"

(Sizes from 24" to 19 foot gangs)

MOTT CORPORATION
514 SHAWMUT AVE., LA GRANGE, ILL. 60525

B32 8 HP 32" WALK or RIDE BEHIND mower has two speeds forward plus power reverse. Can be used to mow fine lawn areas, shred man sized weeds, mulch leaves and renovate.



—insect report—

INSECTS OF ORNAMENTALS

TORTRICID MOTH
(Clepsis fucans)

PENNSYLVANIA: Larvae collected on azalea at Wind Gap, Northampton County. This is a new state record and first record for eastern North America.

CALICO SCALE
(Lecanium cerasorum)

MARYLAND: Reports of infestations more numerous than past 3 years. Silver maple, dogwood, and crab apple appear most heavily infested in several areas of Montgomery, Prince Georges, and Anne Arundel Counties. This species and wax scales seem to be increasing within State.

SOFT SCALE
(Pulvinaria floccifera)

DELAWARE: Very abundant on taxus and holly with eggs laying in progress. Taken at Newark, New Castle County. This is a new state record.

TURF INSECTS

BROWN WHEAT MITE
(Petrobia latens)

WASHINGTON: Infested 150 acres of orchard grass near George and Moses Lake in Grant County; damage 60 percent. UTAH: Moderate on planted grasses at Beaver Dam, Box Elder County.

HARVESTER ANTS
(Pogonomyrmex spp.*)*

UTAH: *P. occidentalis* (western harvester ant) active throughout Cache County on warm days; foraging and clearing mound areas. *P. owyheei* clearing areas about mounds in Curlew Valley, Box Elder County.

BANKS GRASS MITE
(Oligonychus pratensis)

WASHINGTON: Heavy, damaged experimental bluegrass seed field at Prosser, Benton County.

TREE INSECTS

PINE TUSSOCK MOTH
(Dasychira plagiata)

MINNESOTA: Early spring observations of overwintered second-instar larvae showed low population levels in General Andrews State Forest area. There may be some localized areas of heavy populations, however.

OAK SKELETONIZER
(Bucculatrix ainsliella)

MICHIGAN: Adult emergence about 15 percent in Genesee County. Severe infestations on oak in Ingham County appear to be heavily parasitized.

ELM LEAF BEETLE
(Pyrrhalta luteola)

KANSAS: Few adults and egg masses noted on Siberian elms in Shawnee County. None found on elms checked in Riley County. OKLAHOMA: Eggs numerous on Siberian elms in Payne and Major Counties, larvae appeared in Payne County.

PINE SAWFLY
(Neodiprion taedae linearis)

MISSISSIPPI: Defoliation moderate in tops of loblolly pines in 40-acre block in Lowndes County. This is first generation; larvae about one inch in length. TENNESSEE: Immatures observed on loblolly pine in Knox County. This is a new county record.

For More Details Circle (139) on Reply Card

SOD

Past Due Accounts What To Do About Them

By CARL I. MORRIS, Sr.
President, Associated Claims, Inc.
Silver Spring, Maryland

THE collection of delinquent accounts, generally speaking, originates from the extension of poor credit granting. The history of credit, its origin, and uses actually dates back to the era of the cave dwellers.

Those of you who enjoy getting to the bottom of things would be interested to know that according to prehistoric drawings discovered thousands of years ago on the walls of caves, it could be reasoned that one caveman had "sold" a stone ax to a second caveman who was going to pay for it with the skin of the first animal he killed with that ax.

Now this is stretching things a bit. However, it does indicate that credit transactions are as old as the world itself. Much later in the 16th Century, the beginning of the making of loans and the taking of interest for money was made legal in England with a fixed rate of 10%.

As soon as the interest rate was set by law, another law had to be passed to make it possible to collect the interest. As a result of this law, debtors prisons were created in England and not abolished until 1869.

In the period thereafter with the migration to America came the conducting of business on a buy now—pay later basis, which has been going on since the beginning of time. The by-product of such credit transactions has resulted in past-due accounts and collection problems. The collection problems represent only a small percentage of the total credit volume in our country, and the advantages have been made possible through credit purchasing in this country far outweighs any disadvantages.

It is my understanding that sod producers are confronted occasionally with the situation that the sod cutter or installer will pay in advance for a series of sod cuttings, then dwindle to just a few days in advance on cuttings, and finally to a daily basis. The aftermath of this so-called build-up is the beginning of credit extension which in many cases is on a strictly verbal basis.

The nature of the sod business conducts itself to some individuals that are rather insecure as in every other trade. This particular group can operate with a rented or borrowed truck, a few shovels and a minimum of capital outlay. This fact in itself makes it imperative that the screening of your accounts becomes of greater importance. To avoid the creation of uncontrollable collections it is necessary to classify debtors according to the risks involved.

The risks that we must consider are good, fair, and poor.

The good risk debtor has a high credit limit, and is entirely reliable, therefore, of little consequence as a potential collection problem.

The fair risk debtor is probably good, but a little slow. He has a medium rating in regard to his ability to pay and is entirely willing to meet his bills, but through carelessness or through happenings of the unforeseen contingencies beyond his control, he postpones payment of his obligations. This type of risk must be given careful and special consideration, necessitating a study of conditions responsible for the delinquency before pushing the claim to a serious collection situation.

The poor risk debtor is the one who has just enough ability to pay and just enough reputation of meeting his obligations with fair promptness to deserve the privilege of opening an account. In this class are included those debtors who can pay, but do not intend to do so until forced, as well as debtors without a conscience or financial respon-

(continued on page 63)

Examples of Letters Used for Past Due Accounts

January 11, 1973

John E. Doe
700 N. Water Street
Denver, New York 10735

Dear Mr. Doe,

I was just looking over my list of past due accounts and was surprised to find your account on the list. Sometimes invoices get misplaced or misdirected -- maybe this could happen in your case?

Would you please investigate why we haven't been paid? If there is some problem maybe I can help get it straightened out.

Sincerely,

James H. Nightop
Nightop Sod, Inc.

Jmh/ff

February 12, 1973

John E. Doe
700 N. Water Street
Denver, New York 10735

Dear Mr. Doe,

On January 12, we sent you a letter and reminded you that the amount, $700.00, covered billing for sod and installation.

As of this date we have not received word from you relative to the account. We believe we are justified in requesting this matter be given your prompt attention.

Sincerely,

James H. Nightop
Nightop Sod, Inc.

Jmh/ff

March 12, 1973

John E. Doe
700 N. Water Street
Denver, New York 10735

Dear Mr. Doe,

Thank you for your check for $350.00, which pays in part for sod installed on your property at the above address.

Upon crediting the check to your account, we note a balance of $350.00.

A check to balance your account will be appreciated.

Sincerely,

James H. Nightop
Nightop Sod, Inc.

Jmh/ff

May 12, 1973

John E. Doe
700 N. Water Street
Denver, New York 10735

Dear Mr. Doe,

We feel sure the letters we have written you about payment for sod and installation have been delivered to you. At least they have not been returned to us. However, we have had no response to our reminders.

In the event your check for $350.00 is not received by May 28, we will place your account with a collection agency.

Sincerely,

James H. Nightop
Nightop Sod, Inc.

Jmh/ff

If you're thinking of seeding in the next few months, here are 6 good reasons why you should be thinking about new ProTurf® Victa.

1 **Persistent deep blue-green color.** Scotts research and development tested Victa Kentucky Bluegrass for 11 years on plots in Marysville, then at several research substations, and finally at state agricultural experiment stations, in sod fields, on golf courses, and in home lawns all over the country. During those 11 years, Victa proved to have strong summer color which lasted until late fall, in the North. On the West Coast, color lasted throughout the year.

2 **Thick, dense growth with wider and stronger leaf blades.** Victa's spring growth profile is naturally lower than Pennstar, Fylking, or Newport, which makes it ideal for golf turf or any other turf where carpet-like texture is desirable. Lateral instead of vertical growth means Victa fills in bare spots vigorously, choking weeds out. (In tests with equal amounts of Victa and Merion sprigged in two identical 3′ x 4′ squares of bare earth, Victa covered 80% of its square in eight weeks;the Merion plants covered only 55%.)

3 **Extraordinary stress tolerance.** Victa's low growth profile makes it naturally adaptable to close mowing; Scotts tests found Victa maintains a thick, dense, complete cover even when cut to ¾″. Victa performs well under virtually all environmental conditions, including full sun. In addition, Victa is one of the very few bluegrasses to perform successfully in shade mixtures.

4 **Unusual disease resistance.** Aware of most bluegrasses' vulnerability to turf disease, Scotts carefully screened Victa during the testing years, routinely inoculating it with disease during the growing season. The results: Victa proved to be one of only a few bluegrasses in existence with a high degree of resistance to leafspot. Testing in geographic locations around the country showed that Victa also has a good level of resistance to stripe smut, snowmold, mildew, and rust, and more resistance to dollar spot than either Merion or Fylking.

5 **Vigorous germination and growth.** Victa seeds are larger and plumper than most other varieties, which helps the seedling to withstand environmental stress. Victa seed is characteristic of this rugged, very persistent grass—it's excellent quality, with high varietal purity and high yield. In lab tests reporting Victa's characteristics for U. S. Plant Patent #3,156, Victa seed germinated at an unusually fast rate: 41% by the end of the first week, 99.6% in 28 days.

Once seedlings are established, Victa requires less maintenance than many other top bluegrass varieties, yet responds beautifully to fertilizers.

Leafspot damage in May. Common Kentucky bluegrass on the right, Victa on the left.

6 **Compatibility with other grasses.** In addition to offering excellent turf performance on its own, Victa can blend its good qualities with those of other grasses to achieve a specific purpose. Victa is currently being offered by ProTurf in blends with Windsor, Nugget, Merion, C-26, and other varieties.

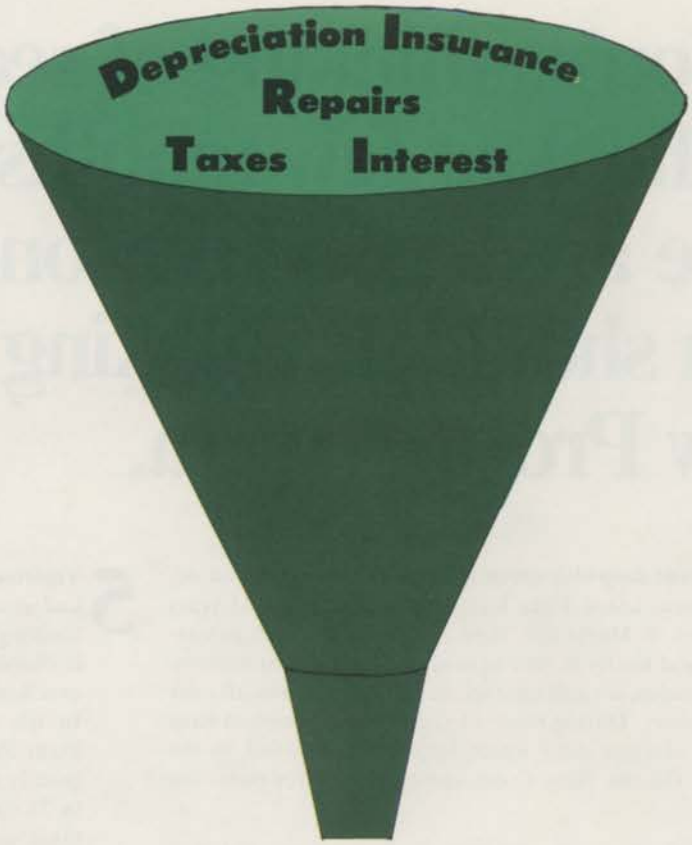
ProTurf Victa. A robust new bluegrass with 11 years of rigorous testing behind it . . . from the people who've been developing top-quality seed for over a century.

A division of O. M. Scott & Sons
Marysville, Ohio 43040
P. O. Box 2079, Oakland, California 94604

Scotts ProTurf®

For More Details Circle (142) on Reply Card

Editor's Note: Fixed costs in the production of sod are becoming more important as the margin of profit decreases. Dr. John R. Hall, assistant professor of agronomy and extension turf specialist at the University of Maryland, brings these fixed costs into better perspective in his presentation of the "DIRTI" 5. By knowing the pitfalls of business, sod producers will have a better opportunity to maximize profits.



The "DIRTI" 5

IT has always been a source of amazement to observe how the cost of living continues to rise and yet the price of harvested sod remains stagnant. In the early 1950's bread was at least one-third today's cost and sod was almost as cheap as it is today.

How has the producer been able to maintain this low cost in the presence of increasing pressure for higher quality sod? Volume sales have, in some cases, created a margin of profit sufficient for returns to land, labor, capital and management. Agronomic and engineering advances have decreased production time and increased production efficiency to the point where sod production has remained a profitable venture in spite of narrow profit margins.

Agronomic research will continue to investigate management factors and chemicals that will decrease production time and increase sod quality in an attempt to increase profit margins.

What can economic research do for your profit margins? A strong understanding of economic principles is as important to successful sod production as your understanding of agronomic principles. A recent economic study conducted by Fred T. Arnold and Billy V. Lessley has provided the sod industry with much needed information on the economic structure, costs and returns of sod production[1]. This bulletin entitled *The Commercial Turfgrass Industry in Maryland: Structure, Costs and Returns* can be obtained from the Department of Agriculture Resource Economics, College Park, Maryland 20740. (Also see WTT Feb. 1973 p44.)

At a recent Sod Cost Analysis Workshop, Dr. Billy V. Lessley exposed sod producers in attendance to the frightening prospect that their businesses might be dying a slow and invisible death hastened by failure to include "The DIRTI 5" in the cost of sod production.

The two basic types of cost involved in sod production are variable and fixed. Variable costs include those that are a function of output. If sod production ceases, variable costs cease. These types of cost include labor, seed, fertilizer, lime, gas, oil etc.

The silent and deadly costs that will put many less knowledgeable sod producers out of business are the fixed costs that are incurred whether sod production is occurring or not. These costs are a function of time and include "The DIRTI 5," Depreciation, Interest, Repairs, Taxes and Insurance.

Depreciation is a decrease in the value of a piece of property through wear or aging. It is an annual cost of sod production that should be calculated and included in the selling price. Mathematically it is:

$$\text{Annual Depreciation Cost} = \frac{\text{Purchase price} - \text{Salvage Value}}{\text{Length of Life}}$$

A $1500 sod cutter that will last three years and be salvageable for $300 has an annual depreciation cost of $400. Average total annual depreciation costs in Maryland varied from $9.62 to $22.14 per acre in 1968. This represented from 6.91% to 15.04% of the total cost of sod production.

The annual depreciation cost should be calculated for every permanent structure and piece of machinery and equipment involved in sod production.

Total depreciation costs should be included in calculations of sod production costs.

Interest is generally considered to be money paid for the use of money. In the case of sod production it must also be thought of as money that you could be making with money that you have tied up in the business of sod production. The cost of tying up your resources in sod production is the value of these resources in their best alternative use. This is sometimes called alternate investment opportunity. The money tied up could be making at least seven or eight percent interest if it were invested. This lost investment opportunity is a cost of sod production and is computed:

$$\text{Average Alternate Investment Opportunity} = \frac{\text{Beginning Inventory} + \text{Salvage Value}}{2} \left(\begin{matrix}\text{\% Interest}\\ \text{achievable}\end{matrix}\right)$$

The more obvious interest cost is that which your business accrues from borrowed money. Alternate investment opportunity and standard

(continued on page 62)

For More Details on Following Page Circle (153) on Reply Card

Put away poa annua now with Betasan®

Selective Herbicide

For straight line chipping and putting, your players need greens free of poa annua. Now's the time to start control of poa. Use Betasan herbicide now to start your poa eradication program...or your prevention program if your turf is free of poa.

Betasan also controls fall-germinating henbit and shepherdspurse along with spring-sprouting crabgrass.

Betasan does not harm desirable turf grasses, dichondra or ornamental plants on your course. It prevents weed growth the practical, economical way.

See your local turf products supplier now for Betasan. Stauffer Chemical Company, Agricultural Chemical Division, Westport, CT 06880.

Betasan® from Stauffer Chemicals

A CREEPING BENTGRASS WITH A SWEDISH ACCENT

By DR. JERRY PEPIN
RESEARCH DIRECTOR
INTERNATIONAL SEEDS, INC.
HALSEY, OREGON

EMERALD Creeping bentgrass, *agrostis palustris,* joins Seaside and Penncross as a third alternative among the seed-propagated creeping bents. Emerald is the first seeded creeping bentgrass to combine vigor, good disease resistance, extremely fine texture and ease of establishment with the uniformity of type heretofore found only among stolon-propagated bents. While admittedly beautiful in appearance, the vegetatively planted strains are very difficult and costly to establish properly.

Emerald is well adapted for use in high quality turf areas such as golf courses, lawn tennis courts, bowling greens and fine lawns. On golf courses it forms an excellent putting surface that is uniform and without "grain". Additionally, testing under tee and fairway management levels has shown Emerald to be exceptionally well adapted for use in these areas. Its excellent density holds the ball up well, while the vigorous stolon production characteristic of the variety rapidly repairs injuries such as divot scars and golf cart tracks.

Emerald is a single clone synthetic variety. Every seed traces back to a single superior parent plant. It produces a very uniform turf which does not develop "patchyness" or "graininess" as the turf matures.

With this uniformity, the golfer is assured a truer ball roll from club face to cup than can be obtained with any other seeded creeping bent. It is this quality that makes Emerald the first creeping bent to combine the best attributes of both the seeded and stolon-propagated varieties.

On putting surfaces, Emerald should be seedwed alone to assure the uniformity so prized by golfers and superintendents alike. For tees and fairways, it may be seeded alone or blended with other varieties to provide genetic diversity.

Although this bentgrass is a new variety in North America, it has been used for fine turf in Europe for nearly ten years. It is marketed there under the name "smaragd," which is the Swedish translation of the word emerald.

Developed by W. Weibull of Sweden, one of the largest and most distinguished plant breeding firms in the world, the strain originated as a single superior plant selected from among many progeny of Congressional (C-19) Bentgrass, a well known stolon-propagated variety. After thorough testing, it was released for European use in 1965. Now, after extensive evaluation in

the U. S. and Canada, seed is available for the American market.

CHARACTERISTICS

Plant and growth characteristics render it distinctively different from other bents now available. Color is an attractive bright green, visibly darker than Seaside and often darker than Penncross. Its color is responsive to small amounts of iron and the shade of green can be adjusted accordingly. Regardless of how dark the color becomes, It never develops a slate-gray cast.

Uniformity and exceptionally fine texture are the two strong points of Emerald. It exhibited a finer texture than any other available seeded or stolonized bentgrass tested in a variety trial of a university in the northwest last year. Since all plants derived from this seed are so uniform. The exceptional texture and density of the variety are maintained year after year with no segregation into unsightly patches.

In seed size, seedling vigor and establishment, this new bent is essentially similar to other seeded types. After establishment, the mature turf is characterized by excellent vigor and aggressiveness, which are essential in rapidly healing divots, cart track blemishes and other damaged areas. It also helps prevent and crowd out weeds and *Poa annua*.

Author (r) inspects an Emerald bentgrass green on the Battle Creek Golf Course, Salem, Ore. Course owner Bill Stevely (1) says that the texture and uniformity of five grens now in Emerald hasconvinced him to switch over other greens as rapidly as possible.

In aggressiveness, Emerald comes on stronger than Seaside but slightly less so than Penncross. As a result, there is slightly less puffiness than with Penncross and a slower rate of thatch buildup. Thus, Emerald does not have to be managed quite so intensely.

Despite the uniformity of this grass, it exhibits good overall disease resistance. It has very good resistance to *Fusarium nivale* and *Typhula* blight. It has exhibited moderate resistance to brown patch and dollarspot, and has shown no marked susceptibility to any of the common turf diseases. However, since this nor any other bentgrass variety is immune to disease, a nor-

(continued on page 64)

BECK'S BIG ROLL SOD HARVESTING AND LAYING SYSTEM . . . For Progressive Sod Growers

Harvest, load, and lay sod FAST, without manual lifting or handling. Let tractors do the hard work. Hand stacking and laying of sod is obsolete. Increases sales by cutting time and cost of installation. Stretches sod 3% to 5%, leaves lawns smoother, with fewer seams and joints. Disposable cardboard tubes are lighter and cheaper than pallets, permit easy loading, as many as 3 rolls at a time, with any fork lift, laying with any tractor.

No need to change over completely. Switch from Big Rolls to your present system in 5 minutes or less. This simple, rugged system can be had for as little as $100/month.

For more information, write:
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For More Details Circle (115) on Reply Card

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All One-Man Operation

New 4-Row Sprig Planter on 3-Row Frame

20" Row spacing. Double sprigs in one operation. Quick coverage. Assures a thick stand in closely spaced rows. New features make the King the best sprigger for Bermuda, Alisa, Zimmerly, Coast Cross, Pangola and other top-growth root planting.

New 2-Row Conservation Special Sprig Planters

Two-Row Models in Frame lengths of 6', 9' and 12'. Compactly built for smaller farms, soil conservation districts, golf courses, etc. Same rugged construction as Standard 2-Row Planter. Also in 1-Row model.

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New 42" Sprig Harvester with Elevator

6 Models to Choose From: 42", 28", 20"

Designed especially for Custom operators. Digs, loads and cuts to planting length 1000-1200 bu. of clean sprigs per hr. . . up to 2000 bu. when equipped with Side-Loading Elevator. Floating PTO Shaft and Shear-Pin protection. Heavy-duty construction.

New 20" Sprig Harvester

The popular new 20" Sprig Harvester digs and loads 400 to 500 bu. of clean sprigs per hr. Up to 600-900 bu. with side loading elevator. Same rugged construction as larger models. Interchangeable parts.

Inquire Now for Delivery This Season

Manufactured, distributed, serviced by

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BERMUDA KING CO.

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For More Details Circle (147) on Reply Card

THE "DIRTI" 5 *(from page 58)*

interest should be included in your annual cost of sod production.

Repairs are a highly variable and unpredictable cost factor in sod production. They will fluctuate with the type of ground under production, intensity of machine use, preventative maintenance program and other factors. Repair costs for general farm equipment are considered to be in the range of five percent of the purchase cost of the equipment.

In sod production, where new production and harvesting equipment is being designed each year, repairs are commonly much higher than five percent of the purchase cost. All sod producers should be including cost of repairs to equipment and permanent structures as a cost of sod production.

The 1968 Maryland survey indicates approximately $8.46 was spent per acre per year on repairs.

If you are producing sod on land that you own you are confronted annually with real estate taxes. If working on rented land there is also this cost to consider. In Maryland the average real estate tax rate is $2.55 per $100 assessed value is set at 60% of current market value. Current figures indicate that the average per acre cost of real estate taxes in Maryland on sod producing land ranges from $4.00 to $4.50 per year.

Insurance on permanent structures, machinery and equipment are a fixed cost that is strictly a function of time. Surveys completed in 1968 indicate that the average cost for insurance in the state of Maryland was $2.36 per acre per year. This amounts to about 1.74 percent of the total cost of sod production. It may seem minimal but it is a cost that should be included.

Data from the Arnold and Lessley survey of 1968 indicates that "The DIRTI 5" should be accounting for approximately 27% of the average cost of sod production. These subtle economic factors could be slowly taking a sod producer out of business. They work on profits slowly but ruthlessly. In cases where "The DIRTI 5" are not being included in the cost of sod production, some of the money being lived on and called profit is partially money that should be paying for the DIRTI 5. A sod producer can only live on "The DIRTI 5" so long, and then these hidden costs eventually run him out of business. They must be included in the cost of sod production, otherwise it will come out of your pocket sometime in the future. □

Dr. Frederick B. Ledeboer Joins Loft's Pedigreed Seed

Lofts Pedigreed Seed, Inc., Bound Brook New Jersey, has announced that Dr. Frederick B. Ledeboer will head the firm's new department of agronomy and research.

Dr. Ledeboer becomes a Vice President, with responsibilities for proprietary turfgrasses and research-development activities with which the Loft organization has become increasingly concerned. Dr. Ledeboer states, "This is a challenging opportunity for me. Meaningful technical programs in the rapidly expanding turfgrass field have special value these days because of their ecological impact and the chance to improve the urban environment." He will have offices in Bound Brook, New Jersey, but will travel widely both domestically and internationally supervising research that involves cultivar production in the Pacific Northwest.

International Harvester Releases New Literature

Just released by International Harvester Company is four-page brochure describing International landscaping equipment. Included are specifications and information on scarifiers-scrapers, blades, and box scrapers.

Copies of brochure, AD-31348-B, are available from your local International industrial equipment dealer or by writing to Advertising Department, International Harvester Company, 401 North Michigan Avenue, Chicago, Illinois 60611.

PAST DUE ACCOUNTS *(from page 56)*

sibility, commonly known as professional "deadbeats."

Among these delinquents are persons who are absolutely indifferent to unfavorable credit opinions and upon whom "duns" ranging from pleading, to threatening, to taking drastic action have no effect. In dealing with this type of account the collection system must operate rapidly, as it is reasonable to assume that the debtor has other credit problems elsewhere.

It must be remembered that 70% of all people pay their bills, 20% are inclined to be a bit slow in paying, 5% are migrants, the here today, gone tomorrow types, 3% are indigents who would pay if they could, but are usually unable to pay while only 2% are true credit criminals.

Records indicate that the rate of repayment in rural areas is far superior to that in the urban communities, this fact primarily established due to the availability of credit and the nature of rural residents operating on a pay as you go basis.

Credit as you know, is the power or ability to obtain goods or services in exchange for a promise to pay at a later date. Therefore, one must analyze the capacity or ability of the individual to pay in the future. I feel that in the extension of credit, the use of the four "C's" of credit can be a truly valuable asset.

The four "C's" as we know it are **character, capacity, capital** and **condition.**

The character of the individual can best be determined by the want or intent of the potential debtor, the capacity, the ability to pay, the capital, the financial strength of the party, and the condition, the soundness of the situation.

Due to the nature of the sod business, it is of extreme importance that a complete credit application be filled with you on any and all potential sod installations. In this respect a very sound credit application constitutes the obtaining of full names of husband and wife, address, former addresses, name and location of business, telephone numbers, banking references, property ownership, and any other pertinent information such as personal references and relatives.

It is ever so important to establish a good collection program, in any business. You must be aware of the aging of accounts on a regular basis; if not, trouble is inevitable. It is advisable to age accounts on a twice a year basis or better still, on a month to month basis. It is all important to realize and take into consideration that the worth per dollar at 90 days is 90¢, at 6 months, 50¢, and at 1 year, 30¢.

Generally speaking, the type of business and the type of debtor dictates the promptness in collections. The importance of promptness cannot be over-emphasized. Much business success depends on this factor and it must be regularly maintained.

Credit selling has been good for the country, and good for the individual credit grantors and consumers. However, there is risk involved for both consumer and creditor . . . primarily for the creditor himself.

Controlled debt is a good thing—uncontrolled it is like a grass fire in a high wind. It is a well-known fact of business that, when people can buy on time, they buy more. Left to his own devices, the debtor will get further and further behind with his creditors—until somebody stops him. The credit grantor, therefore, must keep control of the credit situation, set a limit and see that

(continued on page 66)

A wager you can't lose

We'll bet you the hat that you like

BONNIEBLUE

KENTUCKY BLUEGRASS

Maybe you saw this hat on the Bonnieblue Technical Bulletin which we issued last year. It's become almost as famous as Bonnieblue, the new disease-resistant Kentucky Bluegrass developed by Rutgers University, the United States Golf Association Green Section, and E. F. Burlingham & Sons. In fact the hat is yours if you order 100 twenty-five pound sacks of Bonnieblue. We know you're going to like Bonnieblue's fine texture; rich dark-green color; excellent turf performance and turf-type growth habit. Send the coupon below for more information. Also ask about Koket Chewings Fescue, Lamora Perennial Ryegrass and Sydsport Kentucky Bluegrass.

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Name _____
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For More Details Circle (136) on Reply Card

CREEPING BENTGRASS
(from page 61)

mal preventive fungicidal program consistent with the local area practices for quality turf should be followed.

In addition to its excellent turf characteristics, Emerald is also an exceptional seed yielding variety. Grown in Oregon since 1965, Its average seed yield has been consistently superior to all other creeping bentgrasses, which gives it the advantage of a lower cost of production.

To insure highest standards of quality seed production, all seed of this variety is grown under Oregon state certification standards. International Seeds, Inc., Halsey, Oregon is responsible for production of the entire world supply.

The Rudy-Patrick Company, Mission, Kansas, Marketer for the variety in this country, has found most leading turf seed distributors eager to participate in the introduction of Emerald. Even with substantial first-year seed stocks on tap, early interest and demand has prompted Rudy Patrick to make special provisions for widespread distribution. It is hoped that as many golf course supply jobbers and superintendents as possible are able to share in the initial supply.

MANAGEMENT

Emerald is not a difficult variety to manage properly. A three-times-per-week mowing schedule is usually adequate at putting green height while twice weekly is sufficient at Tee and Fairway levels.

While it prefers a slightly acidic soil reaction, it can be adapted to a rather wide range of soil pH and salinity. On greens, adequate amounts of slow-release fertilizer such as the various ureaform types or milorganite should be applied to maintain the desired depth of color and vigor.

Emerald should be watered as needed, with the combined irrigation water and natural rainfall totalling about one inch per week. During very hot weather, particularly in the transition zone, irrigation should be applied as frequently as necessary to prevent wilting.

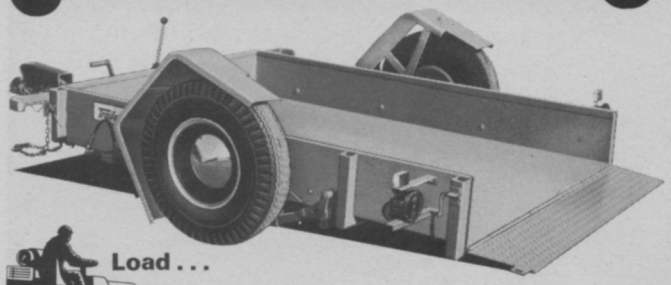
Although this new variety exhibits no extreme aggressiveness, it is a vigorous grower and will require periodic dethatching. Thatch buildup can be slowed by regular top dressing and vertical mowing. Thatch removal is easily accomplished by normal means.

Is also tolerates the normal spectrum of fungicides, herbicides, and insecticides commonly used on bentgrasses. Label specifications and recommended rates of application should, of course, be strictly observed.

ADAPTION

Emerald has proved to be well adapted throughout the normal bentgrass region and, additionally, over an area deep within the transition zone and well into the upper south. During its initial North American testing, which began in 1968, it demonstrated high quality performance under putting green and fairway management conditions in areas ranging from Canada to the Houston, Texas area. Of course within this huge geographic expanse there may be some localized areas where another of the seeded or stolonized bentgrasses may be better adapted. But taken as a whole, Emerald adds a new dimension to the choices available to the superintendent and should be seriously considered by those committed to a program of excellence. □

One Manhandling



It's easy with Trailevator. The hydraulic elevating trailer that lowers to ground level for fast 'roll-aboard' loading—then lifts its own load to hauling position in just seconds Handles loads up to 3,000 lbs.*, lifts and lowers without uncoupling from the towing vehicle. Standard trailer hitch quickly attaches to car, truck or tractor. Try a one-man Trailevator. It'll make you a one-trailer man.

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*Other Models to 5,000 lbs.

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Mr. Sod Grower:

A few territories are still open for a growers franchise of Warren's A-20 and A-34 Kentucky Bluegrasses. These grasses are performance tested throughout the country. Warren's A-20 and A-34 Bluegrasses continue to earn the highest ratings by leading universities doing turfgrass research.

Write for complete information to:

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EMERALD

CREEPING BENTGRASS

SEED SUPPLIES AVAILABLE AT LAST!

Now, an improved creeping bentgrass with more of the qualities golfers and superintendents wanted from seeded-type varieties in the first place.

Exceptional uniformity—Objectionable "grain" and "patchiness" are eliminated, as every Emerald seed traces back to a single superior parent plant.

Ultra-fine texture—seldom equalled even by stolen varieties in official turf trials. The ultimate in posh turf!

Jewel-like color—consistently darker than Seaside and authoritatively rated darker than Penncross but never, no matter how dark, exhibiting the slate gray cast of some other bents.

Excellent vigor for rapid healing of divots, cart tracks and crowding out weeds, including *Poa annua.* More vigorous than Seaside but not so overly aggressive as Penncross and therefore less subject to "puffiness" and excessive thatch build-up.

Disease resistance: Very good resistance to *fusarium* blight and *typhula* (snow mold) along with moderate resistance to brown patch and dollar spot. No marked susceptibility to any of the common turf diseases or chemicals customarily used on bentgrasses.

All Emerald seed is Oregon certified. It's the best seed yielder of any seeded type bent, which means that economy may be included among the distinctive advantages of this new variety.

Contact your local seed supplier or mail coupon.

RP

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Send all Emerald Creeping Bentgrass details, including turf trial reports, prices and suppliers serving my area.

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NEW
FROM PURDUE UNIVERSITY
SODCO
KENTUCKY
BLUEGRASS
U.S. Patent 3135, 3175, 76, 77

Dr. W. H. Daniel, Purdue University, devoted 15 years of breeding, observation and comparison of bluegrass selections before the release of SODCO in 1967. Each of the four lines that make up SODCO were granted patents during 1972. SODCO has exceptional eye appeal due to its firm texture and very dark green color.

SODCO
KENTUCKY BLUEGRASS has outstanding disease resistance and has received superior disease ratings in tests from major universities and turf organizations for:

- STRIPE AND FLAG SMUT RESISTANCE
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SODCO is a dwarf type variety with low growth profile and slower rate of leaf extension. Shade studies and greenhouse tests have proven SODCO to have **SUPERIOR SHADE TOLERANCE** over other bluegrass varieties.

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SODCO KENTUCKY BLUEGRASS IS PREFERRED BY THOSE WHO KNOW TURF

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PAST DUE ACCOUNTS
(from page 63)

it is maintained.

If a credit situation appears to be getting out of focus, then is the time to find out if there is income—other than the obvious salary. If an individual cannot handle additional obligations, give him the opportunity to tell you how he intends to fulfill his responsibility. This sometimes brings out unusual sources of income. **The ability to pay should be equally as strong as the individuals willingness to pay.**

The place to correct your credit losses is in credit extension. Watch your credit granting and you will have few collection headaches. Unfortunately, some people in the field of business sell to anyone who comes along. These are the sellers who are causing three-fourths of the problems among the people of limited means, people who nevertheless have desires for the better things of life, but do not always have the ability to appraise their true financial position and buy accordingly.

However, even with wise and fair extension of credit, there will be some delinquencies.

Today, over half of the sales made by manufacturing, wholesale, and commercial companies, and almost a third of all retail sales, are made on credit basis.

The popularity of installment buying has resulted in a sizable demand for effective collectors. Currently there are more than 25,000 men and women in the United States employed as bill and account collectors. These individuals work for retail stores, manufacturing firms, or collection agencies.

No one has yet come up with an ideal solution which will completely eliminate slow paying accounts. However, the following method has been employed with top results:

1. Grant credit with the idea that every single account could become a collection problem.
2. Establish a regular billing and collection schedule procedure. Decide that you're going to send out one plain statement within 30 days, a second statement 30 days later with a reminder note on it, a collection letter 15 days later, a phone call 15 days after that, and then refer to a collection agency 15 days later. **The important thing is to have a regular, systematic procedure which is followed on every single account up to the place where personal contact with the customer indicates that some alternative course is desirable.**
3. Recognize that time is the safest refuge of any debtor. The more he gets of it, the less likely he is to pay. Delinquent accounts rapidly decrease in value with the passing of time.

   When you have exhausted the possibility of collection yourself, don't give up the account. Turn it over to a professional collector. If the past due accounts are referred to a professional collector as soon as you recognize that your efforts can be spent more profitably in other phases of your business, the trail will still be fresh enough so that the collector has a reasonable chance of collecting. Give him all of the information that you have, the results will be productive.

At one time, the collection agency was considered a tough and unethical kind of business. Collectors sometimes received instructions to collect the money regardless of what methods they used. The majority of modern collection agencies, however, operate honorable businesses with professional standards and ethical methods of doing its job. Collectors feel responsible not only to the one to whom is owed, but to the one who owes as well.

In the assignment of accounts the client guarantees the amount and name of the debtor to be correct and legally owing, thereby, giving the collection company authorization to collect, settle, adjust and forward accounts. An effective collection agency will understand the client's credit and public relations problems and will convey such information to the individual collector.

The average client can always obtain information and answers from a general manager or supervisor. The collection agency through specialization and close contact with the client, is actually an extension of the client's credit function.

The organization of a good collection house provides for the following functions: skip tracing, telephone and mail collecting, legal collections, client reporting, general administration and sales and service. An established collection company will have a "Set-up Section" which receives new accounts and proves them as to addresses, proper name and amount owed.

A good collection company uses psychologically tested and approved letters or notices in series that are

mailed progressively, they will also have special situation letters. A staff of good telephone collectors is most important and insures recovery which can make the difference between a good or brilliant record. A good collector is almost always trained in credit and collections in an agency or finance company.

The professional collectors approach is to always ask for payment in full, (PIF). This in itself is a psychological jolt to the debtor. Failure at this effort requires favorable arrangement based on ability to pay. Once the arrangements are made, accounts are followed on a day to day basis with the follow up coming immediately on failure to comply; this fact being the secret to all good collection practice.

Collectors must be efficiently supervised to insure competent production of payments and to maintain the internal discipline of a well run collection agency. With the advent of much consumer legislation it is of utmost importance that all collectors be thoroughly familiar with regulations in effect with respect to debt collection practice guidelines, both state and Federal.

Reliable agencies of long standing are completely bonded and insured to protect their clients from many contingencies, such as error and ommission, slander and the invasion of privacy.

The final stage of the agency operation is the suing of the debtor, at which time, the agency will seek the authority of the client to summon the debtor to court. The suing by the agency of the debtor is used only after all other attempts to collect have been exhausted. From this point on the agency is required to pursue collections through its attorney representation.

As a member of the American Collectors Association, our firm receives the ACA Directory and membership roster, published each year, listing the members and the more than 8,000 communities they personally serve, which enables a member to call on any other member for personal attention to a debtor who has skipped.

While collection agencies are primarily in business to collect overdue bills, they also work to maintain good will between the creditor and the debtor, sometimes they actually assist the creditor in setting up a wise and effective system of granting credit.

The development of the techniques for granting credit and the techniques for following up to collect have advanced rapidly in recent years. The fact that creditors list with ACA members some $900 million in collection business each year is more than a test of the role the collector is playing in today's credit economy.

Everyone who grants credit is going to have collection problems. It is inevitable. They go hand in glove.

However, these problems can be reduced to a bare minimum by recognizing the position in which most creditors find themselves and taking the steps necessary to meet these conditions. These steps are:

1. Grant credit in a thorough and intelligent manner.
2. Establish and follow a written billing and collection time schedule procedure.
3. Recognize when your efforts will be more productive when applied to other phases of your business.
4. Select and work with a professional collector to help hold your credit losses to a bare minimum.

If you do, you can use this tremendously valuable tool of credit, and not let it use you.

Mitts & Merrill Brush Chippers For...

better design... more efficiency

For more than 115 years Mitts & Merrill has been making specialized machinery for industry. A major part of our business is equipment to reduce scrap and waste. This experience is incorporated into design features on our brush chippers that result in higher efficiency and longer, trouble-free service for you. Only Mitts & Merrill brush chippers offer features like these:

Staggered knife pattern for smoother cutting action. Mounted on an all-steel cylinder that, even without an external flywheel, is heaviest in the industry. Each cylinder revolution gives more cuts, produces smaller chips of uniform size. Self-adjusting knives are reversible; give twice the service between sharpening.

Optional torque converter isolates engine and transmission from cutting shock to minimize maintenance. Makes operation virtually fully automatic; increases operator productive time. Available on all models.

Plus...

• **Positive safety-lock pin** for greater operator safety • **Swing-away, folding feed chute** protects cutting chamber; allows instant access and increases maneuverability • **Heavy duty construction** includes coil spring, torsion-type suspension, and box tubular steel frame.

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For More Details Circle (118) on Reply Card

Facilities Expansion Improves H. D. Hudson Service

The H. D. Hudson Manufacturing Company has announced the relocation and expansion of its west coast distribution facilities. The new facilities provide Hudson customers with order-processing, and shipping service within 24 hours.

V. K. Rawitzer, general sales manager of Hudson, said the company has completed agreements with Cristina Brothers, Inc., 1045 North Tenth Street, in San Jose, California, and Hull and Taylor, 15305 Valley View Avenue, Santa Fe Springs, California to serve Southern California and Arizona.

Rawitzer stated that the new distribution centers are equipped with data processing equipment which will link them with the Hudson general office so that orders can be processed within minutes after they are received. He added that the centers will offer "will call" service when needed and will provide a modern inventory control system to further improve customer service.

The expanded distribution on the West Coast follows the successful re-location of Hudson's Southeastern distribution center in Atlanta, Georgia last year. Hudson also maintains service branches in Minneapolis, Overland Park, Kansas and Chicago.

18 Hole Course Still Going Strong

The regulation 18-hole golf course is still very much alive.

Several years ago, when the first executive length par-60 courses were built, some people in the golfing field thought that this would be the course of the future.

They pointed out that the executive course required less land, is built on a smaller budget, and can be played more quickly.

"Golf tradition is stronger than most people realize," points out Ellis Maples, president of the American Society of Golf Course Architects.

"Once you start tampering with the basic game, you end up like baseball with asterisks in the record book," Maples added. "People want to pit their skills against a common denominator."

He said that proposals to enlarge the cup, shorten the course, or "pep up" the ball usually receive little encouragement from the average golfer as well as the purist.

Florida Nurserymen Elect Gladwin President

Richard A. Gladwin, Gladwin Nurseries, Inc., Jupiter, Florida was elected president of the Florida Nurserymen & Growers Association during their recent 21st annual convention, held at The Breakers hotel, Palm Beach. As vice-president and membership chairman for 1972-73, he saw FNGA grow to the record number of 1905 members. FNGA is the nation's largest state nurserymen's association and is surpassed in membership only by the American Association of Nurserymen.

Other officers elected were 1st vice-president / president elect — John Blaser, Blaser's Nursery, Sarasota, Fla.; 2nd vice-president — George Russell, Russell's Inc., Miami; 3rd vice-president — James Blakely, Kelsey City Nursery & Landscape Co., Lake Park.

Directors-at-large are Albert Kraft, Jr., Kraft Nursery and Gardens, Ft. Lauderdale and Pompano Beach; Kenny St. Germaine, Everglades Nursery and Landscape Inc., South Miami; William Adams, Adams Citrus Nursery, Haines City and Lin Tabor, Glen St. Mary's Nurseries, Glen St. Mary, Fla.

THE BROUWER HARVESTER

HAS OUTSOLD
ALL OTHER SOD HARVESTERS
IN THE FIRST YEAR OF PRODUCTION

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BECAUSE WORLDWIDE CUSTOMER ACCEPTANCE SHOWS THAT IT IS:

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NEW IMPROVED HYDOUT®

Works in moving water

For control of Hydrilla, Chara and other aquatic weed and algae in Florida irrigation and drainage canals, lakes and ponds.

HYDOUT pellets are:

- **EASY TO APPLY** — by mechanical spreader or by aircraft
- **FAST ACTING** — even in moving waters
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- **BIODEGRADABLE** — with no harmful buildup of residues in water or soils
- **ECONOMICAL** — particularly when used in a continuing aquatic maintenance-management program

Hydout pellets settle to the bottom of the canal or lake to provide controlled slow release. Tests show that the slow release rate helps reduce fish toxicity and provide longer-lasting control when compared with other liquid formulations.

Hydout's new improved formulation eliminates equipment-clogging dust and fines to provide quick and economical control of aquatic weed and algae.

You can have weed and algae-free water flow to or from your fields and groves, through your irrigation or drainage systems, lakes and ponds — economically — by specifying **HYDOUT**.

When writing, ask for your free copy of the recently published AGRI-FIELDMAN *Guide to Aquatic Weed and Algae Control* research bulletin.

STOP Before using be sure to read and follow directions and precautions on the label of the product

For more information, contact your local **HYDOUT** dealer, or write:

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For More Details Circle (164) on Reply Card

New Irrigation Supplement Covers Industry Developments

The Sprinkler Irrigation Association has announced a mid-August publication date for a four-section supplement to the Third Edition of "Sprinkler Irrigation", published in 1970. Turf Irrigation, Land Disposal of Liquid Wastes, Continuously Moving Mechanical Sprinkler Systems, and Plastic Pipe are the four subjects covered in the Supplement.

Rapid developments in the industry have brought about the need for the supplement, the first ever published in the history of the textbook, the first edition of which appeared in 1955. The 100-page Supplement will serve to both provide new and useful material and to expand upon information already available in the basic text which has received world-wide recognition and use as the ultimate authority on sprinkler irrigation.

The Supplement is edited by Claude H. Pair, P.E., research engineer (irrigation) for the USDA agricultural research service, Kimberly, Idaho, with the assistance of Kenneth R. Frost, professor, college of agriculture, department of soil, water and engineering, University of Arizona; Walter W. Hinz, extension agricultural engineer, University of Arizona; and Crawford W. Reid, P.E., consulting engineer and lifetime technical member of the association.

A. C. (Chet) Sarsfield, owner of Irrigation Technical Services in Lafayette, California, authored the section devoted to turf irrigation, the first time this subject has been covered in an edition of the book, and Lewis W. Barton of the Lewis W. Barton Company, Haddonfield, New Jersey is the author of the chapter covering liquid disposal of wastes, the most comprehensive coverage of the subject yet included.

The Supplement will retail for $5.00 per copy (surface postage prepaid) in the United States, Canada and Mexico and $5.25 (surface postage prepaid) in other countries. Special quantity rates for 10 or more copies are available on pre-publication orders received prior to August 1, 1973. Orders for the supplement must be accompanied by check or money order. Inquiries should be addresed to the Sprinkler Irrigation Association, 13975 Connecticut Avenue, Suite 310, Silver Spring, Maryland 20906.

Jerry Bransford has been named western turf sales manager for Rain Bird. The appointment was made by Ed Shoemaker, national sales manager. According to Mr. Shoemaker, "This new position has been created due to the rapid growth by Rain Bird in turf irrigation equipment sales throughout the West." Mr. Bransford resides with his family in Santa Ana, California. He will be working out of the Rain Bird headquarters in Glendora, California.

This harvester works anywhere

Unlike other harvesters, the Nunes Mechanical Sod Harvester is guaranteed to work wherever cultivated sod is grown.

Hydraulic controls permit quick and easy adjustment to different field. terrain, soil and sod conditions **while in operation.**

With the Nunes Harvester, you can cut, lift, roll (or slab) and palletize more than 1000 sq. yards of sod per hour.

Roll or slab units are interchangeable and the machinery handles rolls or slabs 12 to 20 inches wide (24-inch width machines on special order.)

Special discounts are available on signed orders, with deposits, received before December 15.

Also available are vacuum sweepers designed especially for sod.

Write for detailed brochures and additional information.

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NUNES SOD HARVESTER

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WHAT MAKES DITCH WITCH THE LEADER?

PRODUCT Ruggedness, dependability, ease of operation and low maintenance costs — just some of the reasons the Ditch Witch J20 is the leader in its class. This 18-horsepower trencher has the price and size of a compact, with design advantages of bigger Ditch Witch models. The J20 gives you rigid-frame construction for stability and safety, four-wheel drive with a choice of tire options, auto-type power steering and full hydraulic convenience controls, a fully-hydraulic backfill blade and much more. The digging chain is driven directly through the J20's three-speed transmission while travel speed during trenching is controlled hydraulically. Why not let Ditch Witch demonstrate the J20 on your job site? See for yourself why Ditch Witch is the leader.

PEOPLE The industry's leading dealer organization helps maintain Ditch Witch's role of leadership. Ditch Witch dealers do their best to supply equipment that fits each customer's individual needs. Then they support their product line with unmatched service. With Ditch Witch, an obligation *begins* with every sale. If you need a part, your dealer will get it to you — fast. If something goes wrong, his factory-trained servicemen will fix it. Every Ditch Witch dealer is a trained professional who believes in his product. He treats each customer honestly and fairly and provides the best possible service. Is it any wonder Ditch Witch is the leader?

FOLLOW THE LEADER!

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. . . offering a full line of trenching equipment from 7-HP to 65-HP.

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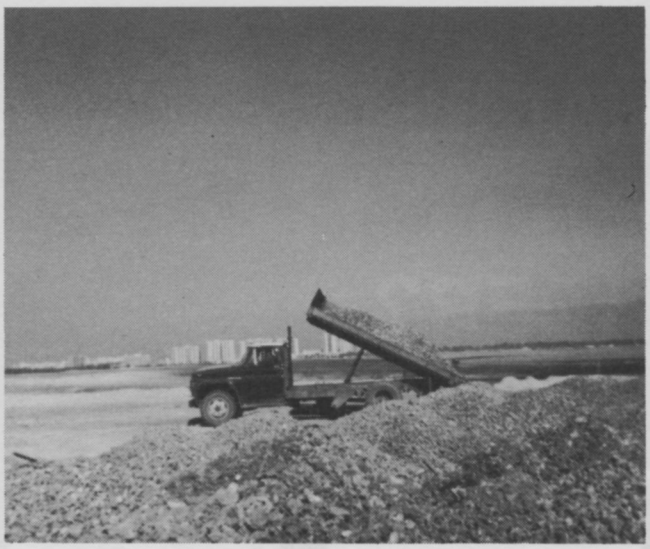

This is not pebble beach but piles of stones picked from Adventura Golf Course in Biscayne Village, Fla. Bergman says this is the most stones ever picked from any job.

STONE PICKIN' PRO *(from page 16)*

then windrowed for the stone picker.

When complete, the course is free of stones and ready for seeding.

What do you do with the stones? Bergman has the answer. Some are used as the base for greens. Others are taken out to future parking areas or used as a base in areas where concrete will be placed, he says.

The business is basically a family operation. There's Melna, "Stoney's" wife, and four sons. Bob, 20, Fred, 18, Michael, 17 and Paul, 14, who drive trucks, tractors and other equipment used in the job. Even the youngest, Mary, 6, helps out by bringing water to the hard-working crew. Another daughter, Cheryl, 22, takes care of the telephone calls at the Michigan residence on M-15. The family moves to the job in a mobile home, formerly an interstate bus.

"Toughest course we've encountered so far was the High Mountain Country Club, Franklin Lakes, New Jersey," says "Stoney." "It was rolling terrain and gave our equipment a workout."

To date, Bergman has picked stones from more than 147 golf courses. "We believe that our operation can be moved quickly to practically any part of the country," he says. "We recently picked stones at the Adventura Golf Course in Biscayne Village, Florida. That experience will go down on our records as the most stones ever picked from one course."

In addition to picking stones, Bergman specialize in seeding, fertilizing, consultation and irrigation work. "We feel that these jobs are interrelated," he says. "When we finish picking stones, the course is ready to seed. Some of our other equipment lends itself to a seeding operation. A contractor who hires seeding and fertilizing is sometimes delayed in getting the operation going. Since we offer these services in addition to picking stones, the contractor can have this vital function performed on time."

Picking stones on new courses permits Bergman to observe and contribute to new trends in golf course construction. Some of these include: fewer sand traps — some newer courses don't use any; dramatic increase in the use of irrigation; and generally more interesting courses.

Bergman figures that as much as 15 percent of the total contract price on new construction should be allocated for stone picking. "The time to pick stones is before the grass seed is planted." "It will never be less expensive; the investment more than pays for itself."

Future plans for this Michigan resident include making another rock picker that can pick up stones of one-fourth inch size. This picker would be used on race tracks. "Our present picker can handle stones even smaller than three-fourths inch," he says. "But we can't guarantee that every stone of that size will be picked up. That's why a second picker is needed." □

EDITORIAL *(from page 6)*

which safety is an integral part. To add ANSI Z133.1 or any other manual to the package of accomplishments of an association does nothing for the tree climber. To elicit and discuss ways in which ANSI Z133.1 can be used as a tool to help the tree climber place a higher value on his own safety will be meaningful to the association member and the industry. We charge that this is the duty of arborist organizations. Without this kind of effort, safety will never be much more than a six letter word.

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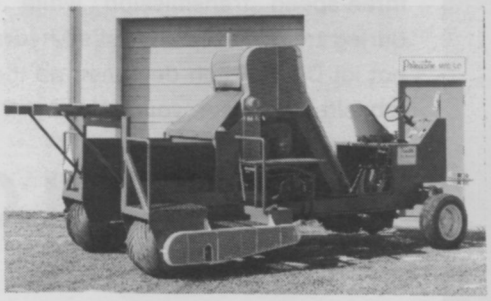

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—Advertisers Index—

Adelphi Kentucky Bluegrass ... 72
Adventure Line Mfg. Co. ... 44
Agricultural Alumni Seed Improvement Association ... 66
American Arborist Supplies ... 32
Asplundh Chipper Co. ... 19
Beck Mfg. Co. ... 61
Wm. Bergman, Jr. Co. ... 41
Bermuda King Co. ... 62
Bombardier, Ltd. ... 31
Brillion Iron Works ... 6
Brouwer Turf Equipment Ltd. ... 68
E. F. Burlingham & Sons ... 63
Samuel Cabot, Inc. ... 51
CareTree Systems ... 24
Charles Machine Works ... 71
Chipman Div., Rhodia, Inc. ... 47
W. A. Cleary Corp. ... 45
Correct Mfg. Corp. ... 26
Creative Sales, Inc. ... 46
Delavan Mfg. Co. ... 30
Diamond Shamrock Chemical Co. ... 13
Dow Chemical Co. ... 25, 37
Elanco Products Co. ... 2-3
Flymo Div., Keltec, Inc. ... 35
FMC Corp., Agricultural Machine Div. ... 23
FMC Corp., Municipal & Industrial Service Equip. Div. ... 26
Hydro Turf ... 64
Internat. Harvester Co. ... 38-39
International Pesticide Applicators Assoc. ... 32
International Spike, Inc. ... 33
Jacklin Seed Co. ... 9, 48
Jacobsen Mfg. Co. ... 21
Kohler Co. ... 10-11
Karl Kuemmerling, Inc. ... 43
Limb-Lopper Co., Inc. ... 29
Lofts Pedigreed Seed, Inc. ... 76
Magline, Inc. ... 64
Mallinckrodt Chemical Works ... 5
J. J. Mauget Co. ... 15
M-B Company ... 42
Mitts & Merrill, Inc. ... 67
Mobile Aerial Towers, Inc. ... 30
Mott Corp. ... 54
Nugget (Pickseed West) ... 46
Nunes Mechanical Sod Harvester Co. ... 70
Pennwalt Corp. ... 69
Princeton Mfg. Co. ... 72
Piqua Engineering, Inc. ... 36
Rain Jet Corp. ... 28
Reach-All Mfg. & Eng. Co. ... 7
Rudy-Patrick Co. ... 65
Safety Test and Equip., Inc. ... 49
O. M. Scott & Sons, ProTurf Div. ... 57
Stauffer Chemical Co. ... 59
Stihl American, Inc. ... 27
The Toro Company ... 75
Twin City Seed Co. ... 36
Union Carbide Corp. ... 17
Utility Body Co. ... 50
Vermeer Mfg. Co. ... 34
Warren's Turf Nursery ... 64

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GROUNDS SUPERINTENDENT or Horticulturist position wanted. M.S. in Ornamental Horticulture plus over 6 years of experience including: planning and supervising a wide variety of landscaping and grounds maintenance projects as well as preparing budgets, purchasing supplies and equipment, and teaching. Resume sent on request. Box 100, Weeds Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

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trimmings

DR. ROSS MCKINNEY of the University of Kansas says that "Currently, we are involved in one of the largest con games ever played, the environmental con game. It is an easy game to play. It requires no skill and works best in highly educated, technologically oriented, socially conscious societies. There is no easier sucker than someone who has been exposed to a smattering of knowledge, who has tasted the fruits of technology, and who feels slightly guilty for having it so much better than his fellow man."

VINCENT BOMMARITO, owner of Tony's restaurant and chairman of the Downtown St. Louis, Inc. beautification committee is unhappy. He wants the city to enforce the St. Louis weed control ordinance. He says that a tough enforcement of the law would alleviate the problems of a bumper crop of weeds expected this summer as a result of a wet spring. But the city says no dice. Not until they get the new heavy-duty trucks needed for the program. Bommarito disagrees. He claims that 90 percent of the weeds are on private property. He thinks that the sanitation officers should get out and cite violators of the ordinance. "Let's not take a defeatest attitude," he said.

THE NATIONAL FOOTBALL LEAGUE PLAYERS ASSOCIATION has asked the Federal Consumer Product Safety Commission to halt further installation of artificial turf on professional, college and high school football fields. It wants the commission to study the turf in relation to injuries. Executive director, Edward Garvey says that the association has asked the commission to prohibit new installations until such time as safety rules are established.

5000 SORTIES of winged warriers are the latest in the battle to combat Dutch Elm Disease in Denver and Fort Collins, Colo. The weapons are wasps, smaller than mosquitoes and harmless to man. They zero in on the elm bark beetle and lay eggs on the beetle larvae. When hatched, the wasp offspring consume the worm stage of the beetles. Technical name for the wasps is Dendrosoter protuberans. Wayland Lilly, senior entomologist for the project says that the wasps will do the job. One big problem, however. Will the wasps survive the cold, Colorado winter?

JOSEPH P. MCKENNA, economist, says that rapid transit is not the answer to traffic congestion in most U. S. cities. Only New York City, with 25,000 people per square mile, meets the preconditions necessary to justify subways. The authority on urban transit says the conditions are high density work areas, high density residence and clearly defined corridors between the two. At the rate with which cities are expanding it won't be long before these conditions will apply to every city over a million population.

YOU CAN PLEASE some of the people some of the time, but not all of the people all of the time. Witness the case of dandelions in England. Not that there are too many, but too few. Seems like the botanists have so diligently applied selective weed killers that dandelions are now something of a rarity. Local conservation groups have joined together in a 'save the dandelion"" campaign. Perhaps the conservationists can re-introduce the dandelion as an organic specimen from which to make a salad or a refreshing bottle of dandelion wine.

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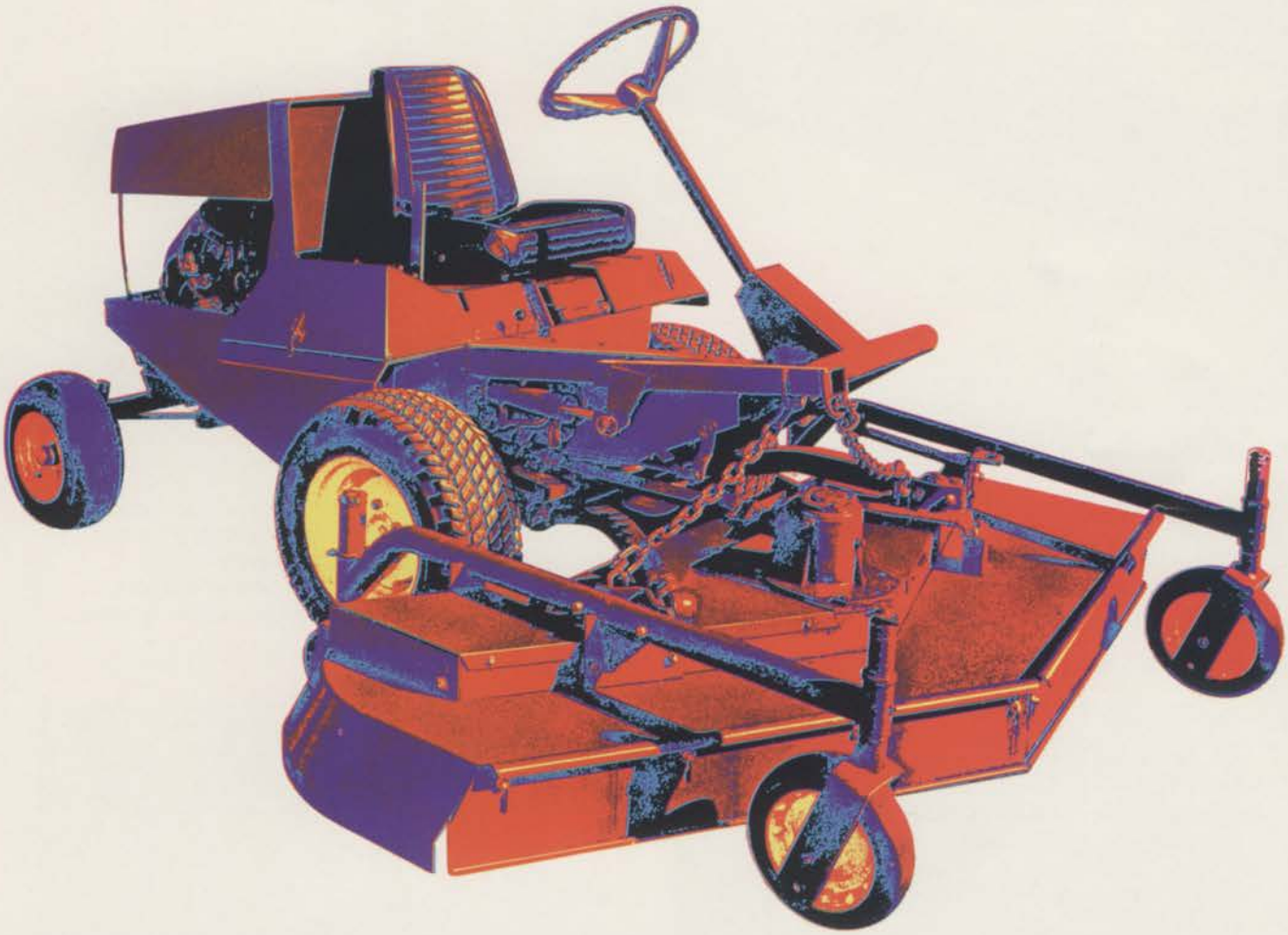

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